

Pioneering in Family Planning

A COLLECTION OF PAPERS ON
THE FAMILY PLANNING PROGRAMS
AND RESEARCH CONDUCTED IN JAPAN

by YOSHIO KOYA, M.D.

PUBLISHED WITH ASSISTANCE OF
POPULATION COUNCIL, NEW YORK

Community Health Cell

Library and Documentation Unit

367, "Srinivasa Nilaya"

Jakkasandra 1st Main,

1st Block, Koramangala,

BANGALORE-560 034.

Phone : 5531518

Pioneering in Family Planning

A COLLECTION OF PAPERS ON THE
FAMILY PLANNING PROBLEMS AND RESEARCH
CONDUCTED IN JAPAN

With the compliments of
The Population Council Inc.
230 Park Avenue
New York 17, New York

Pioneering in Family Planning

A COLLECTION OF PAPERS ON THE
FAMILY PLANNING PROGRAMS AND RESEARCH
CONDUCTED IN JAPAN

by

YOSHIO KOYA, M. D.

PRESIDENT, FAMILY PLANNING FEDERATION OF JAPAN

FOREWORD

by DUDLEY KIRK

INTRODUCTORY REVIEW

by DOROTHY NORTMAN

Published with Assistance of
POPULATION COUNCIL, NEW YORK
Printed by
JAPAN MEDICAL PUBLISHERS, INC.
Tokyo, 1963



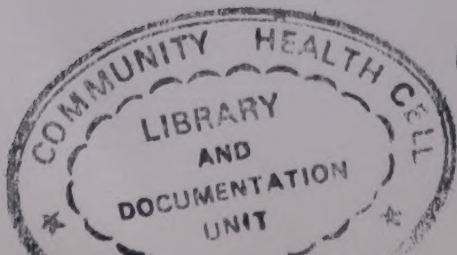
Dr. YOSHIO KOYA M.D.

Born August 1890; Graduated Tokyo University 1916; Appointed Professor of Public Health, Kanazawa University 1932; Health Officer in Chief serving Bureaus of Public Health, Social Welfare and Preventive Medicine, Ministry of Health and Welfare 1939; Member of Council of National Science, Cabinet, 1944; Associate Mission of Cabinet for Inspection of Scientific Policy 1944.

(After End of World War II) Director, National Institute of Public Health 1946; Retired 1956; Professor of Public Health, Nippon Medical College 1956; Retired 1962.

Present Positions

President, Family Planning Federation of Japan Inc. (Elected 1959); Member of Population Problem Council, 1960 (appointed by Ministry of Health and Welfare); Member of Child and Maternal Welfare Council, 1961 (appointed by Ministry of Health and Welfare). Consultant to National Institute of Public Health (1960)



WH-130
N63
05122

Foreword

Japan is one of the most densely populated countries of the world. A generation ago there were pessimistic predictions about her economic future, based on her rapid rate of population growth and limited natural resources. Happily these predictions have not been borne out. Despite the harsh effects of World War II, Japan stands out among Asian countries by reason of her remarkable postwar economic development, accompanied by a rapid decline in the birth rate. As in Western countries and in Communist Europe, the fall in the birth rate has been brought about by voluntary limitation of family size.

One of the foremost leaders in the study of family planning in Japan has been Dr. Yoshio Koya. For many years Director of the Institute of Public Health in Tokyo, and more recently Professor of Public Health at the Nippon Medical College, Dr. Koya is now President of the Family Planning Federation of Japan. His experiments in family planning have been designed to determine the actual practices of family limitation and their motivation in contemporary Japan, and to encourage the practice of other methods than abortion, which has been so widely used by Japanese women as a method of limiting births.

Dr. Koya's work has been geared to the specific cultural and social conditions prevalent in Japan. Nevertheless his studies have interest and value far beyond narrow geographical limits.

It is hoped that this monograph, by bringing together the English publications of Dr. Koya, along with some previously unpublished papers, will make his pioneering work generally accessible, particularly in those countries now seeking to emulate and benefit by the experience of Japan in meeting their own population problems.

*Dudley Kirk
Demographic Director
The Population Council
New York, August 16, 1962*

TABLE OF CONTENTS

	PAGE
Introductory Review	
DOROTHY NORTMAN <i>Research Associate, Population Council, New York</i>	1
Preface and Acknowledgement	
YOSHIO KOYA <i>President, Family Planning Federation of Japan</i>	11
Chapter	
I. Background of the Research and Experiments	14
II. Seven Years of a Family Planning Program in Three Typical Japanese Villages	32
III. Five-year Experiment on Family Planning among Coal Miners in Joban, Japan	42
IV. Family Planning among Japanese on Public Relief	51
V. A Study of Induced Abortion in Japan and Its Significance	63
VI. Why Induced Abortions in Japan Remain High	76

	PAGE
VII. A Survey of Health and Demographic Aspects of Reported Female Sterilizations in Four Health Centers of Shizuoka Prefecture, Japan	85
VIII. Sterilization in Japan	109
IX. Lessons from Contraceptive Failure	121
X. Economic Impact of Instruction in Family Planning: A proposal to the Japanese National Railways	132
XI. A Family Planning Program in a Large Population Group: The Case of the Japanese National Railways	137
XII. The Prevention of Unwanted Pregnancies in a Japanese Village by Contraceptive Foam Tablets	146
XIII. Problems in Procuring Contraceptive Materials in a Rural Area in Japan	150
XIV. Review of Past Achievements and their Implications for Future Studies	166

Introductory Review

To review Dr. Yoshio Koya's articles is to acquire an admiration for the man as well as his work. With neither precedent nor experience to guide him, Dr. Koya has been both scientist and pioneer in the promotion of medically accepted family planning practices. Of all attempts in Asia and other parts of the under-developed world to reduce birth rates, Dr. Koya's experiments are unique in their outstanding success.

In undertaking these experiments Dr. Koya preached the doctrine of the value of family planning as a way of life. At the same time, the object of the research was to learn from the people how to adapt what worked in the laboratory to their needs and means. In nature and content the experiments are a synthesis of these two aims. This is the key to the research. The critic whose objective is pure research may call for greater precision in definition and more rigorous standards of sample selection and research design; the pragmatist will claim that the experiments are too "ideal." Both points of view are valid and both have been voiced, but they are bi-polar. The point of the matter is that in the pursuit of scientific knowledge Dr. Koya sought at the same time to teach the virtues of family planning.

Much as the welfare of an individual patient can touch the heart and mind of the practicing physician, Dr. Koya was acutely alert to the plight of the Japanese people at the end of the

war. The loss of the war resulted not only in economic collapse and hardship, but in a questioning and changing of established customs and traditional values. Both spiritually and physically, many were destitute. The spurt in the crude birth rate from 25,3 in 1946 to 34,3 in 1947 could in large measure be accounted for by the homecoming of the soldiers released from the war. However, as Director of the Institute of Public Health, Dr. Koya recognized that in the post-war confusion, neither the country nor individual families could afford a substantial rise in population.

By 1951 the birth rate was down again to its 1946 level, but the rise in abortions, which was the dominant factor in this decline, was a new cause for concern. Today Dr. Koya is still concerned, (1) because abortions continue to play a very prominent role in Japan's low birth rate, (2) because some influential people, beginning to fear that the birth rate is too low, may set off an anti-family-planning campaign, and (3) because the Government faces the difficult task of providing some 3/4 million new jobs per year for the next five or more years to accommodate the new entrants into the labor force, the heritage of the early post-war spurt in the birth rate.

Obviously more work lies ahead for Dr. Koya and his colleagues. That the focus may change makes it clear that a milestone has been reached, and that the publication of this volume is timely and proper. In all there are fourteen articles in this collection. Except for the "Background" and "Review" articles, all are reports based on original data obtained in first-hand field surveys, representing a monument of work. Dr. Koya is the first to recognize the contributions of his many able colleagues and assistants, but his guiding spirit and interest

in family planning have no peer, in or out of Japan.

The titles vary, the experimental groups differ, each particular article makes its own point. As a composite, however, they are variations on the same theme. The theme is that family planning is both necessary and desirable, that it serves the interest both of the nation and the individual and that successful contraceptive practice is the desirable means toward that end. The purpose of the experiments was to learn how to apply this theme, not to test its validity.

As an introduction to this collection of papers presenting the findings of Dr. Koya's research and experiments, his "Background" article presents a chronological summary of the major post-war events and measures concerning family planning in Japan. It provides an appropriate frame of reference for understanding the focal point of the individual articles. These treat the main theme from several points of view. Initially the basic question was to discover whether the Japanese people were interested in limiting family size, and if so, whether they would respond favorably to medically acceptable methods. For this basic question, Dr. Koya used three different test groups: farmers and fishermen in three rural villages, coal miners in Joban, and relief recipients in Tokyo. Each report is a separate paper in this volume.

Even before Dr. Koya completed these studies (which, by their nature, had to extend over several years), the Japanese people manifested their desire for small families very clearly by a widespread resort to induced abortion. This answered part of the basic question, and although the answer was favorable, the technique they adopted was hardly the kind of family planning Dr. Koya and his colleagues had in mind! It became

important to know who was undergoing these abortions—women who had already borne an appropriate number of children, or young girls pregnant out of wedlock, as charged by the opponents of the 1948 Eugenics Protection Law that liberalized abortion procedures. Thus, two of the studies deal with induced abortion, the earlier one investigating primarily the charge of the critics of the new law, the later, and recent one focusing on the motives for artificial termination of pregnancy.

While not so serious a question as induced abortion, the yearly increase in sterilizations prompted two other studies. Both are concerned with motives and demographic characteristics of sterilized persons (female only in the first study), but in addition, the recent survey examines the relation between induced abortion and sterilization and the legalities involved. Also of interest in the later study are the sexual and psychological effects of sterilization, a subject which has yet to be thoroughly explored.

The data from the abortion and sterilization studies suggested that, confronted with an unwanted pregnancy, contraceptors were more likely to resort to abortion or sterilization than non-contraceptors. Dr. Koya therefore undertook to investigate "Lessons from Contraceptive Failure." Its major finding, that most failures result from occasional omission or miscalculation of the safe period, underscores the wisdom of the continuing search for a simple, effective method that would turn non-users into users and users into successful users.

The case of the Japanese National Railways presents the findings of an actual, not an experimental, family planning program. Dr. Koya is the consultant, happy to offer his services

without charge, on condition that his advice is faithfully followed. Not only is that a real situation, but because of the size of the program (about 80,000 of 290,000 eligible families are already participants), its structure, operation and results are of great significance. Prior to this analysis, Dr. Koya prepared a short article estimating the monetary saving that would accrue to the Japanese National Railways and the Mutual Aid Fund of its employees by complete coverage of Japanese National Railways employees in the family planning program. This too is reproduced in this collection.

Three articles remain, each unique. One deals with the effectiveness of a particular contraceptive—vaginal foam tablets, which were the only contraceptive permitted in the experiment. Dr. Muramatsu's article, "Problems in Procuring Contraceptive Materials in a Rural Area in Japan," is included because of its pertinence to the main theme. Finally, there is Dr. Koya's "Review" article, which is particularly valuable for its proposals concerning future research.

The results produced in Dr. Koya's experiments have been remarkable. His reductions in birth rates are even more striking than Japan's 50 percent decline in the ten-year period 1947 to 1957 (which is something of a statistical artifact because of the 1947 post-war high). Thus, in his five-year experiment in the coal mining area, the (age-standardized) crude birth rate was reduced by 50 percent, from 27.6 in the year before guidance to 13.9 in the fifth year of the program. Similar results were obtained in the three villages, with the rate declining by 32 percent from the first to the second year of the program. Impressive as these results are, what is even more significant is that Dr.

Koya achieved these reductions largely through teaching successful contraceptive practice. In his experiments, although abortions increased initially, (a fact attributed by Dr. Koya to contraceptive failure resulting from inexperience), they fell from an average of 6.3 per 100 wives the year before guidance to 2.1 in the fifth year of the coal mining and fishing village programs combined. By way of contrast, abortion played the major role in Japan's reduction in births.

Why did Dr. Koya succeed so spectacularly where others have failed rather miserably? In all of Asia, not only have his experiments been uniquely successful, but other family planning attempts have not yet met with significant success in reducing births. A new report that the All-India Institute of Hygiene and Public Health is about to publish, showing a birth rate decline in the Singur project from 45 to 35, will mark the first successful attempt in a rural area outside of Japan to achieve a significant decline in births.

One of the interesting features of Dr. Koya's experiments is that he dealt with closed, homogeneous, population groups, sustaining concentrated, trained, and competent effort over a long period of time. The tendency of nationals in other Asian countries to question Dr. Koya's methods as a model for Asia rests primarily on the ground that his techniques are "ideal," requiring too much time and skilled personnel. Valid as these criticisms are, critics seem to have overlooked that Dr. Koya's groups consisted of marginal people, deliberately chosen as least likely to be inclined to practice contraception, rural people who traditionally valued large families as wealth, coal miners renowned for their fertility, and people on public relief. Even among the latter, Dr. Koya found that 98.5 percent of fecund

couples who did not desire any children were willing to practice contraception.

Are there, perhaps, some statistical artifacts to account for the impressive results? Findings in the relief study, for example, of necessity are based on families with sufficient stability to permit a long observation period. In all, 277 families were instructed for a three-year period, among whom there were 92 pregnancies the year before the program and 33 pregnancies in the third year. Whether other relief families would have responded as favorably we have no way of knowing. Similarly, the validity of distinguishing between sub-groups of the total population in the surveys may be open to question, because of the difficulty of precise definition and classification. For example, how is one to distinguish between a contraceptive user and a non-user? Is use on one occasion a sufficient criterion? Lastly, in the absence of control groups, we can only surmise that the results obtained stemmed from the measures applied.

However, rigorous standards of sample selection, research design, and definition were not basic to achieve the objectives of these studies. As Dr. Koya says in his chapter, "Review of Past Achievements," "The studies we have hitherto pursued were of a purely practical, perhaps teleological, nature. Circumstances obliged us to undertake our programs. We have been more concerned with results than with academic, scholarly study. Our purpose was not to analyze but to abet the demographic change in post-war Japan."

The findings in the analysis of the family planning program of the Japanese National Railways lend credence to Dr. Koya's remarkable ability to reduce birth rates in his experiments. As

pointed out in the article, of the 80,000 employees whose families are currently in the program, Dr. Koya found that among 9,282 households which had been in the program for three years, a crude birth rate of 40.8 in the year before the program declined to 30.8 in the first year, 23.0 in the second, and 19.4 in the third year. Inasmuch as the initial high birth rate suggests a recent birth, a conservative estimate of the efficacy of the program in reducing rates would be one based on the decline from the first to the third years, namely a 37 percent reduction in two years. Be it noted that this remarkable result was achieved not in an "ideal" experiment but in a real-life situation. Other than the fact that three-year records were available for the households analyzed, there is no reason to believe that these 9,282 families differ from their unanalyzed counterparts among Japanese National Railways employees.

That Dr. Koya succeeded in his experiments with homogeneous groups of low socio-economic status upon whom family planning programs were likely to make the least impact does not negate the validity of the more widely accepted doctrine of diffusing contraceptive practice from the higher to the lower segments of society. It might be speculated that Dr. Koya's method requires greater effort and a corps of skilled, trained personnel for the initial break, after which acceptance may spread rapidly. In a heterogeneous group, on the other hand, initial acceptance by the elite may be rapid, but diffusion to the broader base may be slow. In any case, one technique does not preclude the other.

It has been argued that because of Japan's high literacy and economic development, its family planning programs are no model for the rest of Asia. Motivation to limit family size

is so high in Japan that only one third of the couples in the survey conducted by the Mainichi Newspapers in 1959 had never practiced any contraception. Indeed, Japan's post-war demographic history is convincing evidence of a strong national will to limit births. Even among the low socio-economic groups with whom he worked, Dr. Koya found the women so determined to limit the number of children that much as he abhorred abortion (from a medical viewpoint) and advised against its repeated practice, he was largely unsuccessful in dissuading them from resorting to artificial termination of an unwanted pregnancy.

Nevertheless, the problem of reducing birth rates is as much one of communication and supplies as of motivation. Dr. Koya's programs show conspicuous appreciation of this point. Motivated as his groups were, he never ceased to teach the value of family planning; Literate as they were, he stressed the lecture, discussion, film and interview. Supplies he distributed free of charge and as for method, he always emphasized the need for simplicity and treated complaints and criticisms with sympathetic understanding.

That the highly motivated seek the means does not imply that the poorly motivated will remain indifferent when offered information and the means. In "Lessons from Contraceptive Failure," Dr. Koya reports that contraceptive use was 67 percent greater among women in areas where health officers had given lectures on family planning than in areas where no such lectures had been held. Dr. Koya's experiments prove that it is possible to evoke a favorable response to family planning even from people of low socio-economic status by offering them information, supplies, and simple, suitable methods. This is per-

haps his most significant finding. In it lies the hope that despite the problem of communicating with large masses of illiterate people, the rest of Asia can restore the balance between births and deaths before achieving Japan's degree of literacy, economic development, urbanization, and modernization.

*Dorothy Nortman
Research Associate
The Population Council
August, 1962*

Preface and Acknowledgment

Publication of this book was conceived by the Demographic Division of The Population Council of New York. To Dr. Dudley Kirk, its Director, and to Dr. Marshall C. Balfour, its representative in the countries of Asia, I want to express my appreciation and gratitude, not only for their interest and encouragement, but also for the financial support given by the Council, which made this publication possible. In addition I am especially indebted to Mrs. Dorothy Nortman, Research Associate of The Population Council, for the preparation of the articles, particularly for her review and help in the analysis of the data and the preparation of the English texts of the more recent articles. She helped me in many aspects beyond her call of duty.

Frankly speaking, at the early stage of preparing this book, I was in some confusion about the items to select from the many subjects considered important. A cause of my indecisiveness was the question of the basic factor in Japan's dramatic reduction in the birth rate. Although this was widely discussed, not only in Japan, but also in other countries, most of the arguments reached no clear-cut conclusions.

Without his knowing it, Dr. Frank W. Notestein, President of The Population Council, helped me resolve my problem of what to include. When he visited with us in Tokyo, I heard him say to one of my colleagues that he had no interest in any argu-

ment that lacked proof. This exerted a great influence upon my attitude toward this monograph. I promptly decided to avoid any argument not accompanied by proof. Thus our published articles constitute the major portion of this book and the new articles, written during the period of compilation of this volume, are those in which findings are backed up by evidence. I therefore have a deep appreciation for Dr. Notestein, although he has no responsibility for the nature of this book.

There are fourteen articles in this collection, plus Mrs. Nortman's introductory review. The first and last chapters, namely "Background of the Research," and "Review of Past Achievements," I wrote specially for this collection, to complete the story and combine all the articles with one thread. The two newest articles are "Lessons from Contraceptive Failure," and "A Family Planning Program in a Large Population Group." These remarks are in reference to publication in the English language.

It is clear from the previously published works how much I owe to my colleagues. I am especially indebted to Dr. Hidebumi Kubo, Dr. Minoru Muramatsu, Dr. Hiroshi Ogino, Dr. Sakito Agata, Dr. Shu Yuasa, Dr. Masabumi Kimura in the Institute of Public Health; to Professor Hideo Noriki, Dr. Hitoshi Yunoki, Dr. Atsushi Kishi, Dr. Teruo Nakano in the Nippon Medical College and to Dr. Yoshio Furusawa, Dr. Otohiko Nishibori, Dr. Tomohiko Koya, Dr. Yasuhiro Suzuki in the Tokyo (Bokuto) Metropolitan Hospital for accomplishing the surveys and experiments. I am also indebted to the many officers, clerks and midwives in the prefectural governments and the Japanese National Railways whose cooperation made our surveys and experiments productive. Finally I should add my

gratitude to Dr. Shosai Kohno, Dean of the school where I have been working. He facilitated my research activities in many ways, even after my retirement from the school.

I also want to extend my gratitude to some of my foreign friends not mentioned elsewhere. Dr. Irene Taeuber helped us in the survey of induced abortion, particularly in the formulation of the questionnaire. She also assisted us, through Dr. Muramatsu, in the sterilization survey, reviewing the analysis of the data collected in the sample area. Dr. Clarence J. Gamble was the person who guided us in many ways in the early period soon after the war, when it was most difficult to carry out studies of this type. His assistance in our experiments in the three villages and on the contraceptive foam tablet made our achievements possible. In connection with eugenic considerations, I am indebted to Mr. Frederick Osborn and Dr. C. P. Blacker. To all these people I should like to express my heartfelt thanks.

I must also mention the renowned name of Mr. John D. Rockefeller 3rd who, I hope, will not mind my expression of deep appreciation to him. Of course he has no concern with the technical procedures of any of the studies, but on every occasion when he visits Japan he encourages me in various ways, making me aware of the importance of my activities not only for Japan but for other countries.

I think this publication must have originated from this kind of consideration.

*Yoshio Koya, M.D.
Tokyo
July, 1962*

CHAPTER I

BACKGROUND OF THE RESEARCH

Many Problems Lie Ahead

SOME people think that by reducing her birth rate Japan has almost solved her population problem. It is true that the reduction in the birth rate during the first decade after the war is one of the most amazing events in demographic history. Nevertheless, the tremendously large number of babies born soon after war are beginning to reach working ages and will soon be looking for work.

According to the estimate of the Institute of Population Problems of the Ministry of Health and Welfare, the average increase in the productive age 15 to 59 will be 1.3 million per year in the period 1960 to 1965 and about .9 million per year in the next half decade 1965 to 1970.

TABLE 1
Estimated Population in Japan
of Persons Aged 15-59
1960-1970
(Thousands)

Year	Number	Increase (from Previous Line)
1960	57,529	
1961	58,141	612
1962	59,577	1,416
1963	61,112	1,555
1964	62,705	1,593
1965	64,033	1,327
1970	68,331	4,298

By **Yoshio Koya, M.D.** Professor, The Nippon Medical College, not published before.

Can Japan develop her economy to meet this growing need for employment? All things considered, one cannot say that the population question in Japan has already been solved.

The Demographic Change

The surveys and research I conducted with the assistance of my colleagues since the end of the war were for the most part purposive, done to furnish information needed by the government to develop a family planning program. Japan at the end of the war was a nation struggling to survive a crisis that left millions homeless and starving. At the same time it was a nation striving to adjust to a new pattern of life based on a doctrine of liberalism that was in sharp contrast to its historic culture and tradition. The result was a sharp demographic change, the most notable feature of which was the decline in the birth rate.

In the early postwar period we did not know whether the Japanese people, particularly those in rural areas, could accept a birth control program. Their concept of the value of children was firmly based on the traditional family system that had its roots in an agricultural economy. Confronted with turmoil, chaos, and confusion in the aftermath of the war, we had to know whether the people would respond to the idea of family planning. We also had to investigate what kind of contraceptive would be suitable, particularly for those in rural areas and in lower socio-economic classes. Soon after we started our researches and experiments in these directions, another important question came to our attention, that of induced abortion. We had to consider the cogent reasons for its rapid spread and to determine the extent to which it was affecting the health of mothers. More recently we have become concerned with sterilization because, judging from its wide popularity, many consider it is being used as an alternative to other contraceptive methods.

Before any of our researches were concluded, the government had to legislate and implement rules and regulations concerning questions of population. What were the major national events that were both cause and consequence of government policy on population following the

war? For an over-all view it is convenient to consider the postwar era in three half-decades, 1945-1949, 1950-1954, and 1955-1959.

During the First Half-Decade (1945-1949)

1945	Surrender.
1945-1947	Judgment passed on war criminals, large-scale purge of national leaders, followed by release of communists from jails. This seems to have caused a confusion among lay people between the concepts of communism and of liberalism.
1945-1949	6.25 million people repatriated from abroad; 5.73 million within three years of the cessation of the war.
1947	Establishment of the new Constitution. As a result, the Civil Law and many others were amended, resulting in dislocations that required adjustment. For example, the breaking-up of the concentration of capital was a setback to the financial circles of the country; the law regarding equal distribution of parents' property among the children brought about all kinds of tragedies and disputes. It was thought that the latter encouraged the migration of young people from their rural, native places to urban districts.
1947-1949	Several times the Ministry of Labor issued information on the labor force. It was announced that the number of unemployed reached 5 to 6 million and that if the underemployed were included, the number would jump to about ten times more.
1947-1949	Announcements by the Ministry of Construction Affairs on the progress of the housing plan did not show sufficient improvement. It was reported that some repatriated were obliged to leave again because their houses were occupied by people who had lost their property during the war. It was at this time that the practice of induced abortion became widespread.
1948 (May)	Passage of the Eugenic Protection Law. The new law differed from the former National Eugenic Law mainly in its provision permitting induced abortion in the case of "a mother whose health may be affected seriously—by delivery from the physical or economic viewpoint."
1949	A Population Problem Council was set up in the Cabinet, which recommended to the government that it remove all restrictions on family planning and disseminate information on its practice.

The First Demographic Surprise

In 1947 the government issued the first series of vital statistics since the end of the war. They showed a total population of 78 million, a crude birth rate of 34.3, and an annual rate of increase of 1.9 per cent. For the next three years the birth rate continued at about this level, and by 1950 it was a striking fact that some 5 million people had been added to the country by natural increase, almost as many as lived in Tokyo City in 1947. That a population the size of Tokyo could be added in three years came as a big surprise.

TABLE 2
Rates of Birth, Death, and Natural Increase
Japan, 1947-1950
(Per 1,000 Population)

Year	Birth Rate	Death Rate	Rate of Natural Increase
1947	34.3	14.6	19.7
1948	33.5	11.9	21.6
1949	33.0	11.6	-31.4 - 2 1949
1950	28.1	10.9	17.2

Some of us thought of the high birth rate as a temporary phenomenon caused by the large number of repatriates and the newly married couples after the end of the war. Soon, however, our death rate began to fall remarkably, and we realized that without a significant decline in births, our natural increase would remain high.

Passage of the Eugenic Protection Law

The decline in our birth rate after 1949 caused us surprise. However, the increasing tendency for women to resort to induced abortion soon became apparent, so that a group of members of the Diet who were medical doctors were prompted to consider a new law to replace the National Eugenic Law. In urging passage of the Eugenic Protection Law, the Diet was advised that conditions in Japan being

what they were, married women often felt they could not bring their children up properly, since they were not adequately housed, clothed, or even fed. This was particularly the case with the repatriates. Also a fairly large number of newly married couples were looking for houses or rooms in vain. Therefore, the need to control births easily and safely was unavoidable.

To achieve these ends the Law contained Article 14, paragraph 4, permitting induced abortion when "health may be affected seriously by delivery from the physical or economic viewpoint," and Article 20, establishing the Eugenic Protection Consultation Offices to give marriage counsel and to disseminate information concerning measures for conception control. In addition, the Law authorized the Japan Medical Association to appoint designated doctors to ensure safety and skill in the operation. It was passed by the Diet in May, 1948.

Enactment of the Law brought to light under official supervision much of the secret practice of induced abortion. At the same time, however, people tended to regard Article 14, paragraph 4, as an encouragement to resort to induced abortion in cases of unwanted pregnancies, so that its practice began to increase. What also came to our attention now that the practice was more out in the open were the injuries caused by the surgical operation. People were surprised at the findings in a survey conducted by the Japan Academy of Obstetrics and Gynecology in 1949 that among 39,550 wives undergoing the operation, 87 had died* and 119 became ill. We learned that some of the deaths were caused by the infusion of highly concentrated sodium chloride solution into the uterus, but this did not diminish our anxiety because these findings related to cases treated by designated doctors set up under the Law. Although I believe the death rate is very small when the operation is performed by skilled physicians, importance is attached to the possible bad effect in later years on the health of the mothers who undergo repeated induced abortions.

*This is a higher death rate than is generally reported for induced abortion. The explanation probably is the one given in the text plus the fact that the designated doctors were more likely to keep accurate statistics than other doctors performing the operation.

Population Problem Council Set Up in Cabinet in 1949

The situation was regarded as critical, and the government set up the Population Problem Council in the Cabinet in April, 1949. In November of that year the Council recommended to the government that in order to promote public health and realize a sound and cultural life, it was necessary to prevent a sharp increase in population by furnishing married couples with information on contraception by teaching reasonable methods and by giving conception guidance to all classes of the country.

To implement this recommendation, the Council advised:

1. Immediate improvement of equipment in the Eugenic Protection Consultation Offices of the Health Center, education of those in charge of the programs by nation-wide medical training institutions in matters of population problems, family planning, eugenic protection and the techniques of conception control;
2. That particular effort be made to enlighten those groups of people among whom it is most difficult to spread contraceptive information and methods; also that positive measures be taken to enable them to procure the proper means of contraception free of charge through a partial revision of the Social Security Law;
3. That it is essential to exercise caution to maintain good social customs and morals in furnishing information on conception control.

Initiation of Our Studies

Convinced as we were of the need to reduce both birth rates and abortions, frankly speaking, none of us on the Population Problem Council (I was a member) felt a reasonable certainty that the people of the country would accept the program we suggested. Furthermore, our doubts were greatest concerning the very people we thought needed family planning most, namely, the poor, the indigent, and the rural populace. If the government was going to sponsor family planning in Japan, we had to know how these people would respond. It was also

important to know how industrial workers would respond because the development of the economy depended increasingly upon them.

Accordingly, we initiated our studies and experiments, selecting at the outset three rural villages, public relief recipients in Tokyo, and the Joban coal miners. For funds to carry out these experiments, we had to rely completely upon friends and interested parties, inasmuch as the National Institute of Public Health, of which I was Director at the time, had no budget appropriation for this purpose.

There is no need to dwell here upon the specific results of our researches, inasmuch as they comprise the papers of this publication. Suffice it to say that wherever we conducted our experiments, we found acceptance of family planning and reduction in birth rate. Also given enough time, abortions as well as births declined.

Demise of the Population Problem Council

When the Population Problem Council presented its recommendations, opposition was voiced not only in the government but also by the Diet members representing the rural parts of the country, who thought (as we ourselves had feared) that their constituents would not welcome the idea of family planning. Accordingly, the recommendations were not adopted, and the Council itself was dissolved in March, 1950, less than a year after its formation.

Nevertheless, the Council fulfilled a valuable purpose. As Dr. M. Muramatsu states in his booklet "Some Facts about Family Planning in Japan," "It is to be noted that these recommendations were of significance in that they led Japanese national leaders to be constantly aware of the difficult population problems and of the need to promote family planning practice in Japan. Furthermore, as time went on the problem of extensive use of induced abortion as a means of family limitation came to the fore. Dr. Yoshio Koya, Director, Institute of Public Health, was highly successful in making the Minister of Welfare well convinced of the urgent need to take positive action to combat this situation." (page 35, THE MAINICHI NEWSPAPERS, Population Problems Series No. 12, Tokyo, 1955)

During the Second Half-Decade (1950-1954)

Period of Two Epoch-Making Events in Family Planning History in Japan

Two notable events occurred in the next half-decade, 1950 to 1954. One was the rapid decline in the birth rate (see Table 3), the other the rapid rise in reported induced abortions (see Table 4). Gratified as we were by the former, we could not ignore the extent to which it depended upon the latter. In recognition of this situation, the Minister of Welfare, Mr. Ryugo Hashimoto, issued a Cabinet decision in October, 1951, stating, "Abortion exerts undesirable effects on maternal health. It is therefore necessary to disseminate contraceptive information to decrease these undesirable effects."

TABLE 3

Rates of Birth, Death, and Natural Increase
Japan, 1950-1954
(Per 1,000 Population)

Year	Birth Rate	Death Rate	Rate of Natural Increase
1950	28.1	10.9	17.2
1951	25.3	9.9	15.4
1952	23.3	8.9	14.4
1953	21.5	8.9	12.6
1954	20.0	8.2	11.8

TABLE 4

Number of Reported Induced Abortions
(Thousands)

Year	Number
1950	320
1951	459
1952	798
1953	1,067
1954	1,143

To implement the Welfare Minister's recommendation, the Ministry of Welfare took two important steps. First, in June, 1952, it compiled a specific plan for the promotion of contraceptive practice, which was sent to the Governors of all the prefectures in Japan. Second, it appropriated an annual budget of about \$60,000 for the program, instructing the Prefectural Governments to add twice the funds they received.

Although the budget appropriation was not considered adequate for the goals in mind, as the first expression of the government's attitude toward family planning, its influence was extremely great. Altogether, the Cabinet decision, the compiled plan, and the budgetary appropriation proved more effective in promoting family planning than the passage of the Eugenic Protection Law.

The highlights of the period may be summarized as follows:

- | | |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1951 (Oct.) | Cabinet decision that contraceptive information be disseminated to decrease the practice of induced abortion. |
| 1952 (June) | Ministry of Welfare plan for the promotion of contraceptive practice sent to the Prefecture Governments. |
| ✓ 1952 (May) | The Eugenic Protection Law amended to eliminate requirement that the reasons for performing an induced abortion be examined. |
| 1954 | Establishment of the Council on Population Problems in the Ministry of Welfare. This Council was of a permanent character because it was set up in the Law governing the "Establishment of the Ministry of Welfare." |
| 1954 (Aug.) | Recommendation submitted by the Council to the government concerning the necessity for "Quantitative Adjustment of Population." |
| 1955 (Oct.) | Start of the "Specific Program for Family Planning," or the family planning program for indigent people. |

The amendment to the Eugenic Protection Law in May, 1952, and the Council recommendation of 1954 are perhaps the most significant of the above events. Justification for the amendment eliminating the need to investigate the reasons given for desiring an induced abortion was to prevent delay in the performance of the operation. Some people have emphasized that, strictly speaking, the Law permits induced abor-

tion only in cases of women who have a good medical or economic reason and that, therefore, induced abortion is not legal in Japan. The fact of the matter is that this amendment served as a spur, conspicuously increasing cases of induced abortion because of the ease of justifying the request. However, we must not forget that the amendment was only a means of gratifying the growing desire to limit family size. Had there been few people seeking to check childbirths, the practice of induced abortion would not have grown as it did.

The new Council on Population Problems of the Ministry of Welfare recognized the connection between abortion, individual desire to control family size, and the national interest. It is therefore worth noting in some detail the gist of its recommendation to the government made in August, 1954.

“In order to solve the grave population problems which this country is facing, measures should be taken to increase the capacity to support the population. In view of the present situation, however, where the heavy pressure of population is detrimental to the successful accumulation of capital as well as to the rationalization of industries, it is necessary for the government to adopt policies to curb the population increase.

“The movement for the popularization of the practice of conception control should be conducted not only from the standpoint of the protection of mothers' health but also from the standpoint of family planning or a part of over-all population policies. Steps should be taken so that adequate means and facilities are afforded to all individuals who desire to limit births and also that all obstacles and frictions which make difficult the successful dissemination of family planning are removed.

“Induced abortion, which is widely prevalent today, is very often followed by another pregnancy. Therefore, operation usually must be repeated frequently if it is to be effective for the limitation of births. This necessarily produces undesirable effects upon the health of mothers. For these reasons it is recommended that the government take necessary measures speedily not to let the matter rest.

"In regard to the dissemination and practice of family planning, due attention must be paid to possible changes in the eugenic quality of the population which may occur as a result."

In accordance with the above recommendation, we (I was once again a member of the Council) proposed the following:

1. To set up an agency in charge of family planning program in the Ministry of Welfare.
2. To encourage activities of case-workers (most of whom were midwives) by increasing allowances for them.
3. To facilitate the practice of conception control by people in lower income brackets by applying to them the system of Health Insurance.
4. To furnish contraceptives free of charge or at low cost to indigent people.
5. To encourage active co-operation with the Welfare Agencies of many enterprises in the country to promote family planning of laborers' families.
6. To initiate researches and surveys on family planning in order to make the government program effective and adequate.
7. To make every medical school in the country provide a curriculum for teaching family planning theory and methods to the students.
8. To impose on physicians who perform induced abortion an obligation to furnish knowledge about contraception to the patients in such a way that there may be no need for repeating the operation.

Although the results have been far from ideal, many of our proposals have produced fairly good results. With regard to Item 1, the Bureau of Public Health and later the Maternity and Infancy Affairs Bureau of the Ministry of Welfare were put in charge of the family planning program. As for Item 2, the Ministry increased the allowances for case-workers several times. The third suggestion, to appropriate Health or Social Insurance funds for family planning, is producing very good results. The health insurance agencies cover a tremendous

number of employees of small enterprises throughout the country. The question of whether a family planning program is permissible in a health insurance system has been resolved on the ground that by providing contraceptives and facilities for laborers' families, their health was being protected from the hazards of induced abortion. One of the largest such undertakings is the family planning program of the Japanese National Railways.

The proposal that contraceptives be furnished to the indigent either free or at low cost is being realized on a wide scale. As for the suggestion that welfare agencies cooperate with the government, the fact that more than a hundred leading enterprises have started programs may be regarded as an indirect response to our proposal. Medical schools have not yet put into practice our proposal that family planning be included in the curriculum, but in some schools where teachers are interested in the subject, it is being taught. Although it is difficult to know to what extent our last proposal is being practiced, there are indications that many gynecologists, particularly those in public hospitals, are making efforts to teach contraception to their patients who have undergone abortion. It is also said that they are telling their patients how soon they can expect another pregnancy after abortion, based on the data of our survey on induced abortion conducted in 1952.

Criticism of Our Experiments

Our experiments were proving that all classes of people were interested in family planning and that given instruction and supplies at a cost they could afford, they learned in remarkably short periods of time how to become faithful and successful contraceptors. Nevertheless, some people criticized our methods, saying, "Your way of guidance is too ideal to follow." Similar criticism was also heard from people in other countries who felt that our methods might suit Japan, where literacy and motivation were high, but not the other Asian countries.

My answer is that our methods may be ideal but not impossible. In our case, it was absolutely necessary to know to what extent we could check unwanted births by providing ideal guidance. We therefore gave supplies free of charge at the beginning, particularly to indigent people. We also sent a doctor to each village once every three months for con-

sultation with every wife and appointed a full-time midwife to visit each family once a month. While it may be difficult to give this much care to large numbers of people, ideas do travel rapidly today, and it should be possible to adopt our basic concepts and goals to meet the specific needs and conditions of other places. Our own government was encouraged by our achievements and developed plans based on our experience.

Some Significant Results of This Period

To sum up this period, I will review some of its significant results. Between 1950 and 1955 the number of married women aged 15 to 49 increased by almost a million, or about 7 percent. Total live births, on the other hand, were 1.7 million in 1955 compared with 2.3 million in 1950, representing an absolute decrease of 26 percent and a 31 percent decrease in the number of births per 1,000 married women.

Induced abortions increased during this period from a reported level of 320,000 in 1950 to 1,170,000 in 1955. My estimate of the actual number (see Table 5) is 480,000 and 1,755,000 for 1950 and 1955 respectively. If my estimate is correct, in 1955 the number of induced abortions was equal to the number of live births.

TABLE 5
Married Women, Births and Abortions, 1950, 1955

Item	1950	1955
Number married women 15-49 (000)	12,470	13,400
Number live births (000)	2,337	1,730
Births per 1,000 married women	188	129
Number reported induced abortion (000)	320	1,170
Estimated actual number induced abortions (000) ¹	480	1,755
Induced abortions estimated per 1,000 married women	39	131

Note: Estimated by the author as follows: The reported number of induced abortions per married woman was obtained for each prefecture. The highest of these rates was assumed to be the minimum applicable to all prefectures. On this assumption I found that total abortions were about 50 percent greater than the reported number.

During the last Half-Decade (1955-Recent Time)

Success in Family Planning

This brings us to the period 1955 to recent time. As mentioned before, Japan is now in a difficult situation because its working-age population will increase by about 1.3 million per year for the next few years, requiring an estimated 750,000 new jobs per year. What a difficult task it is for the government to meet this need may well be imagined, although our economic and technological development are creating a demand for new, skilled workers.

As far as the family planning program is concerned, we think that to a considerable extent, we have attained our objective. Within ten years the crude birth rate declined by 50 percent, from 34.3 in 1947 to 17.2 in 1957. At present the rate of natural increase is about 1 percent per year. The practice of induced abortion is still a problem, but its tendency to decrease since the beginning of this period (see Table 6) is of significance.

TABLE 6
Crude Birth Rate,
Rate of Natural Increase, and
Induced Abortion, In Japan, 1955-1960

Year	Crude Birth Rate	Annual Percent Natural Increase	Reported Induced Abortions	
			(Thousand)	Per 1,000 women 15-49 years old
1955	19.4	1.16	1,170	50.2
1956	18.5	1.05	1,159	48.6
1957	17.2	0.89	1,122	46.2
1958	18.0	1.05	1,128	45.6
1959	17.5	1.01	1,099	43.6
1960	17.2	0.96	*	*

*—Not yet available.

Does this mean that more people are practicing conception control? According to the Mainichi Population Investigation Office, 42.5 percent of the married couples with wives under 50 years of age were practicing conception control in 1959 and another 20.2 percent had practiced it; the percentage who had never had any contraceptive experience was 33.0 in 1959 compared with 63.6 percent when the first survey was made in 1950. Moreover, the 1959 survey found that even in rural areas, the practice was almost as widespread as in the larger cities. (See Table 7).

TABLE 7

Percentage Practicing Contraception
1955, 1957, 1959

	1955	1957	1959
Married couples	33.6	39.2	42.5
Couples in six big cities	37.7	44.3	46.8
Couples in other cities	34.0	40.5	42.5
Couples in rural districts	31.9	35.7	40.8

Note: Based on Public Opinion Surveys in Japan conducted by the Population Problems Research Council, The Mainichi Newspapers, Tokyo. Data are from **Fifth Public Opinion Survey**, No. 16, 1959, pp. 19, 21.

It is quite apparent from the increasing practice of contraception and decreasing tendency to resort to induced abortion that the family planning program is playing a more and more dominant role in limiting births. All these achievements are the manifestation of the growing intention on the part of the public to produce a small-sized family. The contributions of the government family planning project and of many voluntary organizations and leaders are in large measure responsible. Accordingly, the highlights of their activities in this period are of interest.

1954 (April) Establishment of the Family Planning Federation of Japan. At its first meeting, the Governing Body decided to request membership in the International Planned Parenthood Federation. It also proposed that the Fifth International Planned Parenthood Conference in 1955 be held in Tokyo.

- 1955 (May) Visit by the Minister of Welfare, Mr. Hideji Kawasaki, to the Joban coal mine to observe the details of our family planning experiment among the miners. His visit, in which he talked directly to some of the wives, received extensive newspaper coverage. The Ministry of Welfare later awarded a prize to the Joban Coal Company for its co-operation. The total effect was such that more than eighty industrial enterprises launched a family planning program thereafter.
- 1955 (Oct.) The Fifth International Conference of the International Planned Parenthood Federation held in Tokyo. Its theme was "Overpopulation and Family Planning." Attendants from abroad numbered about ninety, from Japan more than three hundred. The Prime Minister, Minister of Welfare, Speakers of the Upper and Lower Houses addressed the Inaugural Meeting. The conference exerted a vital influence on the public in Japan toward recognition of the importance of family planning.
- 1956 (Sept.) Important amendment made in the Special Program of Family Planning as a result of which the program includes indigent people in general as well as those on Public Relief.
- 1956 (Nov.) The First All Japan Conference for Family Planning held in Tokyo under the joint auspices of the Ministry of Welfare and the Family Planning Federation of Japan. The number of attendants exceeded 2,000, consisting mainly of leaders in this field and case workers. There were two days of discussion of the many current important questions. A resolution was passed awarding prizes from the Ministry of Welfare and the President of the Family Planning Federation of Japan to ten groups, including communities and individuals who had contributed to the program.
- 1957-1959 Annual meetings held by the All Japan Conference, attendance increasing yearly and exceeding 3,000 in 1959. Thirty prizes were awarded in 1959. The resolutions passed have helped to develop new plans and attain new budgets.
- 1959 The government family planning program transferred from the Public Health Bureau to the Maternity and Infancy Affairs Bureau of the Ministry of Welfare. The purpose of the transfer was to develop the program in connection with the health of mothers. The Maternity and Infancy Affairs Bureau's nation-

wide system for protection of child welfare and its Council for Children's Welfare, established by law, greatly facilitated the spread of family planning.

Japan's success in reducing her birth rate has led to the view among some leading people in the Diet that the government should no longer encourage family planning programs. My personal opinion is that this view will not gain ground because the general public is too strongly attached to the idea of the small-size family. On the other hand, for a long period of their history, the Japanese people were under a totalitarian government, trained to be obedient to the authorities. If, therefore, the view that family planning programs are not in the national interest were to gain power among influential people in the government or the Diet, no one can be sure that the present favorable attitude of the public toward family planning would continue.

Another obstacle in our path is the appearance of a group of women representatives in the Diet who proclaim that the provisions in the Eugenic Protection Law permitting induced abortions almost without limit are tantamount to permitting professional prostitution and constitute an international disgrace. I do not agree with this opinion. Moreover, people are now quite accustomed to the present law, and an amendment to it all of a sudden would increase black market operations, thereby endangering the health of mothers and increasing the cost of the operation. In expressing these views to those who sought my opinions on the matter, including a woman leader of the Diet, I fortunately found myself in agreement with the Ministry of Welfare.

The question of induced abortion remains a pressing one. At the All Japan Conference in 1958, it was hotly discussed, opinion being divided by those favoring re-amendment of the Law and those who favor the Law as it is.

I argued as follows:

1. A reduction in induced abortion is possible by further encouragement of education in family planning. Our experiments in the three rural villages and the three coal mines clearly indicate this possibility.
2. Special importance should be attached to efforts to teach people

the correct use of contraceptives. To put this point across to the audience, I used a graph (see page 83) showing (a) that by proper educational activities we achieved significant reductions not only in pregnancies but also in induced abortions and (b) that the ratio of induced abortion per pregnancy could not be reduced. I stated to the audience that this latter point is the most important of our findings because it suggests that when women who are motivated to limit births become pregnant accidentally, they cannot be dissuaded from resorting to induced abortion. The only alternative to induced abortion, therefore, is education in successful contraceptive practice. To prohibit abortion by law would be not to abolish the practice but to drive it into the black market, with all its attendant evils. (c) However, I also recognize that there exist some incomprehensible provisions in the present EUGENIC PROTECTION LAW. One of those is Paragraph 4 of Article 14. It says that "Induced abortion is permissible when mother's health may be seriously affected by pregnancy or delivery, from a physical and economic point of view". How can a doctor confirm the economic situation of a certain patient? This is impossible. Thus, I believe that this line should be amended in a more reasonable manner.

CHAPTER II

SEVEN YEARS OF A FAMILY PLANNING PROGRAM IN THREE TYPICAL JAPANESE VILLAGES

A RAPID growth in the population of Japan occurred after the end of World War II. This was caused by the repatriation of 6,000,000 citizens from abroad, by a marked increase in the birth rate, and by sudden decrease in the death rate made possible by antibiotics and the application of public health measures of the Western type.

Recognizing the threatening imbalance between population and resources, the Japanese Government appointed a Population Council. This body, in 1949, recommended that the Government should promptly make possible the control of family size, not by induced abortion, by conception control⁽¹⁾. Since it was not known at that time which methods would be more acceptable and effective in Japan or how the needed instruction and supplies could best be distributed, we undertook a study to learn how the recommendation of the Population Council could best be carried out.

The results after two years were reported in the Japanese Medical Journal⁽²⁾ and the Archives of Population⁽³⁾ and, after five years, at the World Population Conference, held at Rome in 1954, and at the

By **Yoshio Koya, M.D.** with the Assistance of **Dr. H. Kubo, Dr. S. Yuasa**
and **Dr. H. Ogino**

From the **Milbank Memorial Fund Quarterly**, October 1958, XXXVI, No. 4.
The present paper will also be published in a Medical Journal of Japan,
Nihon-iji-shimpô No. 1787.

Acknowledgment: Thanks are due to **Dr. Oliver R. McCoy** and **Dr. Clarence J. Gamble** for many helpful suggestions for the work which has been described, and to the National Committee on Maternal Health of New York for a contribution of part of the costs. We are also indebted to the Health Centers of the Kanagawa and Yamanashi Prefectures for their assistance in the work.

Fifth International Conference on Family Planning, held at Tokyo in 1955⁽⁴⁾⁽⁵⁾.

This article tells of the progress through seven years.

The Villages Chosen

At the beginning of this work we selected three villages of different types.

1. Kamifunaka-Mura, a rice-cultivating village in the irrigated area in Kanagawa Prefecture, contained 370 households. All of the housewives had finished primary school and 25 per cent had graduated from middle school. Some of the inhabitants increased their income through part-time employment away from the family farm.

2. Minamoto-Mura, a farming village in the mountains of Yamaguchi Prefecture contained 459 households. Most of the wives had finished primary school and 14 per cent had completed middle school.

3. Fukuura-Mura, a typical fishing village, contained 332 households. Only 12 per cent of the wives had graduated from middle school. Because of variations in the catch of fish from year to year, the standard of living is lower than in the other villages.

The 1,161 families and 6,936 persons in the three villages with which the study began in 1950 have increased to 1,325 and 7,133 respectively, in 1957.

Procedure

At the beginning of the work, I and physicians on my staff visited each family in the three villages at least once a month. One of us would stay in each village several days for interviews with wives. During our absence midwives (one for each village) visited them from time to time to learn whether the contraceptive method was satisfactory and to renew the supplies. The midwives had the responsibility of recording what contraceptives were used and the date of each menstrual period. At the first interview we told the wives that the spacing of children was possible and offered them the needed instruction and supplies. It was

found that much education was needed to overcome the "Kodakara" concept. This word means that children are the greatest wealth of a family as well as of a country. This concept had been emphasized by the militarists before and during the war. It is reenforced by the usefulness of even small children in the rice-planting season. To overcome this belief physicians emphasized the advantages to family and country and especially to the children already born, of bearing only the number that could be raised in health and happiness. We also pointed out that smaller families might be desirable because of the new law which gave each child an equal share in the inheritance of the parent's property. It is our belief that this educational work has greatly encouraged the continued use of birth control.

The Contraceptive Methods

Each family was told of the various birth control methods available. These were (in alphabetic order) condom, diaphragm-and-jelly, foam tablet, jelly-and-syringe, safe period, sponge-and-salt solution, sterilization, and withdrawal. The possibility of using one of the chemical or mechanical methods during the days of the month during which conception can take place was explained. Each family was encouraged to choose the method they preferred, and allowed to change from time to time as they wished. Supplies were provided free of charge. Sterilization was recommended only when the family was very poor and already had four or more children, or for reasons which the Eugenic Protection law would permit.

The proportion using each of the various methods in 1951 and 1957 is shown in Table 1 arranged in the order of preference in 1957. It will be seen that the condom has been the most popular, being used (including those who alternate with other methods, mainly the safe period) by 33 per cent in the earlier and 53 per cent in the later year. This large proportion may be caused by the wide use of the condom, particularly in the army, for protection from venereal disease.

One of the methods recommended was the insertion of a sponge soaked in a 10 per cent solution of ordinary table salt (6), a method which has the advantage of cheapness and of readily obtainable supplies. Instructions were given to place three and one half teaspoons of salt in

a glass of water to make the 10 per cent solution. In the beginning 22 per cent of the families tried the method, but the proportion has decreased until now only one per cent are using it. One reason for this

TABLE 1

The proportions of contraceptors using
each method, 1951 and 1957.

	1951 Per cent	1957 Per cent
Condom	32	38
Condom, and Safe Period	1	12
Diaphragm and Jelly	4	13
Sterilization	0	13
Safe Period	12	10
Withdrawal	1	8
Foam Tablets	0	4
Sponge-and-Salt	22	1
Jelly-and-Syringe	20	1
Other Methods	4	0
Total	100	100

decline appears to be that few couples have a separate bedroom, and treatment with salt solution in the night without its being known to others is difficult. Furthermore the sponge may be seen by others when it is being dried. Lack of privacy has also discouraged the use of jelly-and-syringe; the proportion fell from 20 per cent to one per cent.

As the physicians visited the villages about once each month the fitting of diaphragms was readily arranged. The users of this method increased from 4 to 13 per cent.

Sterilization was chosen by an increasing number of families in the three villages, reaching a total of 46 in 1957 as shown in Table 4. These are 9.5 per cent of the 429 using any form of contraception. This table gives the cumulative totals of reported sterilizations since the operation continues to limit births in succeeding years. For the nation the total number from 1948 to 1956, inclusive, was 213,955, or 2.4 per 1,000 population. The total sterilizations in the villages were 6.4 per 1,000 population, about 2.7 times the rate for Japan.

The Proportion of Families Using Contraception

In Table 2 the 1,325 families of 1,957 are grouped according to their need and use of contraception. Of the 570 families found exposed to the risk of pregnancy at the time they were last visited (wife menstruating and not ill) 429, or 75 per cent, were practicing contraception. Most of the remainder wanted more children. Only three families were undecided and not using birth control.

TABLE 2

Risk of pregnancy, desire for children,
and use of contraception, 1957.

1. Permanently Not Exposed to Pregnancy	627
Beyond Menopause	388
Apparently Sterile	81
Spouse (Husband or Wife) Dead	147
Divorced	11
2. Temporarily Not Exposed to Pregnancy	128
Pregnant	43
Postpartum Amenorrhea	56
Temporarily Separated	11
Ill	18
3. Exposed to Pregnancy	570
Want Children or More children ¹	138
Undecided and Not Using Birth Control	3
Practicing Contraception ²	429
Total Families	1,325

1. None of these had more than three children.
2. Including sterilization.

Table 3 gives, for the 687 families in which the wife had not reached the menopause, was not considered permanently sterile, and was living with her husband, the numbers and proportions using contraception (including sterilization) according to the number of living children. As is to be expected the proportion of users rises with the number of children, reaching a maximum of 97 per cent of those with 5 or more.

TABLE 3

Families in which the wife had not reached menopause, was not considered permanently sterile, and was living with the husband, by number of living children and use of contraception, 1957.

Number of Living Children	0	1	2	3	4	5 and More	Total
Number of Families ¹	74	146	157	155	96	59	687
Wife Sterilized	1	1	8	13	12	11	46
Using Other Contraception	2	64	83	110	78	46	383
Total Using Contraception	3	65	91	123	90	57	429
Families Using Contraception per 100 Families	4	45	58	79	94	97	62

¹ Including those temporarily not exposed to pregnancy.

The Decrease in the Birth Rate

The effects of the birth control program on the births and pregnancy rates in the three villages are shown in Table 4. The crude birth rate of 26.7 per 1,000 population in the year before the program began fell to 14.6 in the third year. The frequency of visiting the villages was then decreased to see whether the birth rate would rise by this treatment. In the interval between visits by the physician supplies were available from a midwife living in each village. After finding that the birth rate did not rise significantly, the visits were again intensified for the 6th and 7th year, when they were made monthly. That this increased effort did not significantly lower the birth rate further is an indication that reproduction in Japan will not decrease without limit as some alarmists have suggested.

The birth rate of 13.6 in the seventh year is approximately one-half of the original value and three-quarters of the birth rate of the nation. In comparing the villages with the nation it should be remembered that the reduction of the birth rate for the whole of Japan in recent years resulted mainly from the increasing number of induced abortions, while in the three villages the reduction was accomplished with a simultaneous reduction in the number of abortions.

The pregnancy rate per 100 couples per year of exposure was cal-

culated according to the method of Stix and Notestein (7), by subtracting from the elapsed time for each couple, ten months for each full-term delivery and four months for each abortion. It should be noted that these pregnancy rates are based on all couples in the three villages in which the wife had not reached menopause, including families practicing and not practicing contraception and also those couples considered apparently sterile. The pregnancy rate, like the crude birth rate, decreased by about 50 per cent.

TABLE 4

Pregnancies, births, induced abortions and deaths
before and during the contraceptive program

Year of Program	1948 -1949	1949-1950	1st 1950-1951	2nd 1951-1952	3rd 1952-1953	4th 1953-1954	5th 1954-1955	6th 1955-1956	7th 1956-1957
Number of Families		1,161	1,165	1,160	1,239	1,233	1,259	1,298	1,325
Number of Persons		6,936	6,943	6,930	6,917	6,934	7,028	7,057	7,133
Number of Pregnancies	220	200	190	155	126	130	120	119	105
Pregnancy Rate per 100 Couples per Year of Exposure (Six-Notes- tein)	35.6	29.9	28.6	21.0	17.8	18.0	18.2	17.1	15.1
Number of Live Births	205	185	157	107	101	95	97	100	97
Crude Birth Rate per 1,000 Population	29.6	26.7	22.6	15.4	14.6	13.7	13.8	14.2	13.6
Crude Birth Rate in Japan ¹	33.5	33.0	28.1	25.4	23.4	21.5	20.0	19.4	18.4
Net Reproduction Rate	1.88	1.51	1.35	0.86	0.82	0.83	0.84	0.90	0.81
Number of Induced Abortions	3	12	19	31	20	25	16	10	9
Induced Abortions per 1,000 Population in Three Villages	0.5	1.9	3.0	4.8	3.1	3.5	2.4	1.4	1.2
Reported Induced Abor- tions per 1,000 Popu- lation in Japan ¹	3.0	6.0	8.0	8.2	9.0	9.0	13.2	13.0	
Cumulative Steriliza- tions in Three Village	0	0	0	5	16	31	31	40	46
Cumulative Steriliza- tions in Japan ¹	5,752	17,155	33,388	55,812	88,364	126,420	169,675	213,955	258,235
Cumulative Steriliza- tions per 1,000 in Three Villages				0.72	2.3	4.4	4.4	5.6	6.4
Cumulative Steriliza- tions per 1,000 in Japan ¹	0.07	0.39	0.39	0.65	1.00	1.43	1.92	2.36	2.84

1. Values for Japan are for calendar year ending six months after the period to which the values for the three Villages in the same column apply.

Of the 97 births in the 7th year, 84 were in families which had two or fewer previous children. As shown below, the probability of having a live birth during the year declined rapidly with increasing numbers of living children in the family.

Living Children	Number of Births	Births per 100 Families
None	41	36
One	27	20
Two	16	11
Three	7	5
4 or More	6	4

The decreased number of births has brought about a decrease in the net reproduction rate from 1.51 in 1949-1950 to 0.81 in 1956-1957.

It is of interest to calculate the effect of the birth control program on the population of the three villages. If, in each of the seven years of the program, the birth rate in the villages had been the same as that in Japan there would have been 385 more births than there were, or 5.4 per cent of the present population.

Had it been possible by a countrywide expansion of the contraceptive program to lower the birth rate of the nation during the seven years to the same level as that in the three villages, there would have been about 3,700,000 fewer births or four per cent of the present population. It is important to note that this would have been a voluntary reduction of undesired births, which might have been accomplished had it been possible for the Government to carry out the recommendation of the Population Council made in 1949.

More important is the prospect for change in the population in the future. The reproduction rate in the three villages which had been 1.51 before the program began, fell to 0.86 in the three years and 0.81 in seven years, suggesting that the village population will begin to decrease in the near future. Demographers have estimated that the population of the whole of Japan will not begin to decrease until about 1990.

The Decrease in Abortions

The first report of the Population Council, issued in 1949, emphasized the importance of birth control to protect Japanese mothers from the deaths and damage to health resulting from the increased use of abortion. It was followed, on October 26, 1951, by a statement of the Japanese Cabinet⁽⁸⁾⁽⁹⁾ which concluded with the recommendation, "Abortion has undesirable effects on maternal health. It is, therefore, necessary to disseminate contraception to decrease these undesirable effects."

The decrease in abortions anticipated by the Cabinet is well shown by the experience in the three villages. In the first two years the number of reported induced abortions followed the upward trend of the country as a whole (Table 4). Subsequently, it decreased to one-third of its maximum and in the last year the number, when compared with the population is only one-eleventh as great as that for the reported cases in Japan. The proportion is actually less than one-eleventh since the reporting in the villages is reasonably complete while it is estimated that in the nation there are two or more times as many abortions as are reported.

Of the nine induced abortions in the three villages during the seventh year, one was done because of tuberculosis, two because of an unexpected increase in the economic burdens of the families, and six followed failure of contraception. But one must remember that these six people are the unsuccessful ones among 429 families practicing birth control. I think this proportion of failures is inevitable. The number of abortions in our three villages seems near the lowest limit.

Summary

1. A choice of several birth control methods was offered by physicians to all families in three typical Japanese villages.

2. More than half of the families who used birth control chose to use the condom. Diaphragm-and-jelly and the safe period were the second and third most popular.

3. Sterilization was chosen by 9.5 per cent of those using contraception. Those sterilized were 2.7 times as many, when compared to

the population, as those reported for Japan as a whole.

4. After seven years, contraception was used by 75 per cent of the families exposed to pregnancy and by about 95 per cent of those with 4 or more children.

5. The birth rate fell from 26.7 before the program began, to 14.6 in the 3rd year and 13.6 in the 7th. This is 74 per cent of the rate for Japan. The net reproduction rate decreased from 1.51 to 0.81.

6. The annual number of abortions fell from 31 in 1952-1953 to 9 in 1956-1957. The latter value is about one-eleventh of the rate for Japan.

7. It is estimated that, if an extension of the program to all of Japan could have resulted in the same birth rates as those in the three villages, there might have been in the seven years 3,700,000 fewer unwanted births or four per cent of the present population.

References

1. "Recommendations in Respect to Adjustment of Population," November 29, 1949. Population Problem Council in the Cabinet.
2. Koya, Y. and others: The New Population Phenomenon and its Counter-measures; a study of three rural Villages. Japanese Medical Journal, No. 1439, 1951.
3. Koya, Y. and others: A Study on Model Villages for Family Planning. Japanese Medical Journal, No. 1475, 1952, and Archives of Population, No. 1, 1952. The Population Association of Japan.
4. Present Situation of Family Planning among Farmers and Coal Mine Workers in Japan. Proceedings of the World Population Conference, published by United Nations' Department of Economic and Social Affairs, 1955.
5. Koya, Y. et al: Five years of Family Planning in three Japanese Villages. Report of Proceedings of the 5th International Conference on Planned Parenthood. October, 1955.
6. Gamble, C. J.: An Improved Test of Spermicidal Activity without Dilution or Mixing. Journal of the American Medical Association, January 11, 1953, 152, p. 1037.
7. Stix, R. K. and Notestein, F. W.: Controlled Fertility. Baltimore, Williams and Wilkins, 1940, p. 38.
8. Koya, Y.: The Program for Family Planning in Japan. 3rd International Conference for Planned Parenthood. Bombay, India. Nov. 1952, and Eugenical News, March, 1953, 38.
9. "Resolution in Regard to the Quantitative Adjustment of Population," August 24, 1954, Minister of Welfare's Advisory Council.

CHAPTER III

FIVE-YEAR EXPERIMENT ON FAMILY PLANNING AMONG COAL MINERS IN JOBAN, JAPAN

BECAUSE of Japan's very rapid industrialization in the past decade, considerable importance is attached to the family planning experiment conducted among the Joban coal miners. Their reputation for producing many children, and the attendant hardships, known colloquially in Japanese as "Tanko Binbo Ko-dakusan," was a consideration in selecting them for the family planning study of an industrial group.

In this, as in the other studies undertaken since the end of World War II, the direct aim was to ascertain the extent to which the high birth rate could be lowered without an increase in induced abortions. The experiment among the coal miners was conducted over a five-year period, from April 1953 to April 1958.

Population Characteristics

The Joban coal mine is located in Fukushima Prefecture about 100 miles north-east of Tokyo. Although the population is distributed in a vast area including Yumoto City, the miners included in our experiment live in Iwasaki District, a limited area of Joban. At the inception of our programme, there were 716 households with a total population of 3,880. These figures changed somewhat during the course of the study because of retirement or change of domicile.

By **Yoshio Koya, M.D.** with the Assistance of **Dr. H. Kubo, Dr. H. Ogino, Dr. S. Yuasa and Dr. E. Hayashi**

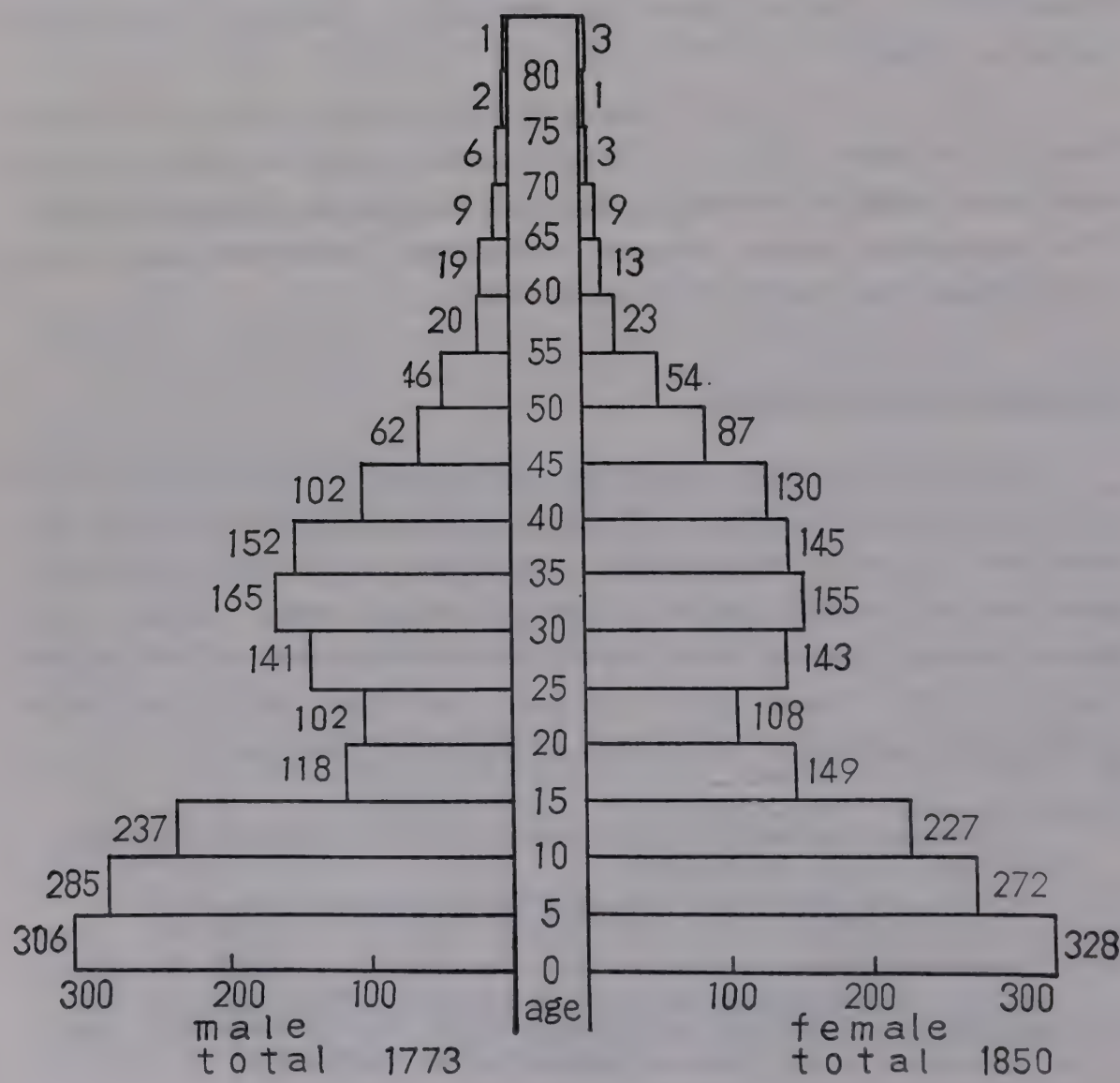
From **Population Studies**, Vol. XIII, No. 2, November, 1959

Acknowledgement: I wish to thank the Population Council, Inc., New York, for providing financial assistance for five years to this project. For their encouragement in our work, deep appreciation is hereby expressed to **Mr. John D. Rockefeller 3rd, Mr. Frederick Osborn, and Mr. Dudley Kirk.**

The age composition of the population was peculiar. As shown in Fig. 1, the age-pyramid looks like a gourd with two bulges, the upper bulge indicating a density of persons 25 to 45 years of age; the lower, a high proportion of children less than 15 years old. In contrast, the proportions of those over 60 years of age and those between 15 and 25 were unusually small.

How had this irregularity developed? It is a fair assumption that the heavy concentration in the 25-45 age groups resulted from the influx into the region immediately after the end of World War II of

FIGURE 1 AGE COMPOSITION, of 3623 population as of October, 1954
Total Population 3623



able-bodied persons suited to coal mining. The strikingly large proportion under 15 are, of course, their children, born before or after their arrival. The relatively small size of the 15-25 age group was not the result of a low birth rate, but was due to the fact that the immigrants were too young for their offspring to be between 15 and 25 years old in 1953. Since the majority of the workers came without their parents, the group of aged people was an irregular minority. The average age of the wives was 32.8 years in April 1953.

Reproductive History

To provide a basis of comparison for our results, a survey of the reproductive history of the miners' families was undertaken prior to the launching of our programme.

As shown in Table 1, our 716 families had experienced 2,363 births (including stillbirths), plus 96 spontaneous and 172 artificial abortions. Thus, the average number of children per wife was 3.3. The rate of spontaneous abortion was 3.6 per 100 pregnancies, and of induced abortion 6.5 per 100 pregnancies.

TABLE 1

Reproductive history of Joban families, as of April 1953

Number of Pregnancies	0	1	2	3	4	5	6	7	8 or more	Total
Number of families	64	86	129	91	116	68	52	54	56	716
Total pregnancies		86	258	273	464	340	312	378	520	2631
Children born (incl. stillbirths)		80	241	250	414	295	287	343	453	2363
Natural abortions		3	14	13	19	7	7	7	26	96 (3.6%)
Induced abortions		3	3	10	31	38	18	28	41	172 (6.5%)

Guidance Procedure

After recording the necessary reproductive histories, as a first step we invited all the wives to come to hear our talks. The general

invitation helped to secure co-operation, for if any wives had been excluded they might have made a virtue of this and censured those who attended as being shameless or immoral. Further, the invitation to all wives, whether or not they were of childbearing age, added practical weight to our theme that the aim of family planning was not only to control births but to ensure adequate care for the children already born.

The initial talks were mainly concerned with the aims of family planning. We tried to instil a consciousness of the hardship caused by the birth of more children than could be properly fed and educated, especially at a time when the husbands neared retirement age. We also stressed the hazards of repeated induced abortions. There is no doubt that these educational efforts were strong factors in the adoption of birth-control practices. Methods were described later, with the help of films, pamphlets, and the like. Films were particularly useful in overcoming shyness.

At the beginning of the programme we visited Joban frequently, remaining for several days each time for individual interviews with each wife. As the programme got under way we came every two months. During our absence a midwife was always on hand to provide contraceptive supplies, give guidance and instruction and keep records of menses, pregnancies, abortions, etc.

Effects of the Programme on Reproduction

The reproductive histories before and during the course of our programme are shown in Table 2.

In the year before the study began there were 208 pregnancies among our 716 families. This figure diminished steadily each year of the programme, declining to 53 pregnancies for 590 families during the last year. The pregnancy rate decline was from 41.0 to 15.9, a reduction 61%. Births dropped from 130 in 1952-53 to 17 in 1957-58, with corresponding crude birth rates of 33.5 and 5.4, representing age-standardized birth rates of 27.6 and 13.9 respectively.

The latter very low birth rate made us ask ourselves whether we had succeeded too well. Considering however, that the families had

TABLE 2

Reproductive history before and during guidance programme

	Before Guidance	After Guidance				
	1952-3	1953-4	1954-5	1955-6	1956-7	1957-8
No. of families	716	697	696	675	638	590
No. of persons	3,880	3,698	3,680	3,333	3,306	3,168
No. pregnancies	208	177	105	88	78	53
Pregnancy rate (Stix-Notestein) ...	41.0	30.2	20.5	17.7	19.0	15.9
No. of live births	130	77	53	32	32	17
Crude birth rate	33.5	20.8	14.4	9.6	9.7	5.4
Age-standardized birth rate† ...	27.6	23.3	20.9	18.9	16.3	13.9
Crude birth rate in Japan	23.4	21.5	20.0	19.4	18.4	17.2
No. of induced abortions	63	91	49	46	37	28
Induced abortions per 1,000 popula- tion	16.2	24.6	13.3	13.8	11.2	8.8
Induced abortions reported per 1,000 population in Japan	9.3	12.3	13.0	13.1	12.8	12.3
Cumulative sterilization	17	29	48	52	69	56*
Cumulative sterilization reported, Japan	55,812	88,364	126,420	169,675	213,855	258,205

* Decrease due to the fact that some of those sterilized had retired from the Company.

† These have been computed on the assumption that married women in Joban experienced the age-specific fertility rates of all Japanese women.

already produced an average of 3.3 children at the inception of the experiment and that an additional 0.3 children per family were born during the programme, it was to be expected that the wives would be eager to avoid further births.

Moreover, two additional findings offered encouragement in the evaluation of the results. One was that no family that did not already have at least one child was practising conception control. The proportion with one child that had adopted family limitation was 10%; with two children, 77.3%; three children, 100%; four or more children, 79%. Thus the motivation for contraception was quite reasonable.

The second encouraging finding was that the decline in birth rates had occurred simultaneously with a reduction in induced abortions. This matter is more fully discussed below.

By the last year of the study, 266 or 90% of the 296 families exposed to the risk of pregnancy were practising some form of conception control. Of the remaining families, 22 or 7.4% wanted more children, and the other 8 or 2.7% were undecided. The number of households by pregnancy exposure during the last year is as follows:

TABLE 3

Number of families by pregnancy exposure

1. Permanently not exposed to pregnancies	...	...	...	...	...	...	275
A. Natural causes	...	...	...	...	...	...	219
Beyond menopause	...	...	...	...	...	89	
Sterile or apparently sterile	...	...	...	...	...	85	
Husband or wife dead	...	...	...	...	...	43	
Divorced	...	...	...	...	...	2	
B. Sterilization	...	...	...	...	...	...	56
2. Temporarily not exposed to pregnancies	...	...	...	...	...	...	19
Pregnant	...	...	...	...	...	6	
Post-partum amenorrhœa	...	...	...	...	...	7	
Not living together	...	...	...	...	...	1	
Ill	...	...	...	...	...	5	
3. Exposed to pregnancies	...	...	...	...	...	...	296
Want children	...	...	...	...	...	22	
Undecided and not using contraceptives	...	...	...	...	...	8	
Practising contraception	...	...	...	...	...	266	
Total number of families	...	...	...	...	...	...	590

Type of Conception Control

Great preference was shown for the condom, either alone or with some other method, partly because we recommended it, but chiefly because it had the greatest appeal. This was also our experience in other studies, such as the three villages for example, where under conditions of free choice 50% chose the condom. Of the families in the present study, about 20% adopted the safe period, and 7% withdrawal. With regard to the latter, the frequency of withdrawal was found to be between 5 and 10 per cent in the several studies made to date in Japan.

Methods employed by the 266 families practising contraception at the end of our five-year programme were as follows:

	Families	
	Number	Per cent
Condom	164	61.6
Condom and safe period	39	14.7
Withdrawal	11	4.1
Condom and jelly	2	0.8
Safe period	6	2.3
Diaphragm and jelly	11	4.1
Condom or withdrawal	3	1.1
Tablets	8	3.0
Safe period or withdrawal	4	1.5
Diaphragm or condom	1	0.4
Condom or tablets	9	3.4
Other	8	3.0
Total	266	100.0

The percentage using diaphragm and jelly, 4.1, was a little higher than found in other places in the country, probably because in Joban facilities had been provided for physicians to fit diaphragms.

Induced Abortion

It was very gratifying to us that the number of induced abortions declined from 63 in the year prior to our experiment, representing a rate of 16.2 per 1,000 population, to 28 or 8.4 per 1,000 population in the last year of the programme. This was not easily achieved. Reference to Table 2 shows that induced abortions increased at the beginning stages, reaching 91 (25.3 per 1,000 population) during our first year. This reflected the tendency in Japan as a whole for abortion to increase at an accelerating rate.

To impress upon the miners the necessity of avoiding this drastic method of birth control, we stressed the injuriousness of repeated induced abortion and at the same time assured them that, by the correct use of contraceptives according to our instructions, they could avoid the hazards of abortion. Their response to our programme was such that, from the second year on, induced abortion declined.

Some cases of abortion were inevitable. Among the 28 during the last year, 7 wives had wanted a child but subsequently changed their minds because of the development of a serious illness or unexpected economic hardship. In five other cases, contraceptive measures had been neglected because the wives thought they were beyond the menopause or in an assumed safe period soon after delivery. In two cases the wives were feeble-minded. Contraceptive failure accounted for 12 of the 28 abortions. The remaining two cases involved an additional abortion for two of the 26 wives.

The data indicate that 12 wives or 4.5% of the 266 practising contraception could have profited from further instruction. In other words, 95.5% of the wives in Joban were practising birth control successfully.

Sterilization

During the course of our programme a total of 56 sterilizations occurred. Reasons were as follows: heart disease, 7; tuberculosis, 7;

narrow pelvis, 1; habitual miscarriage, 3; cancer, 4; hereditary diseases, 2; other causes, 12. In addition twenty wives were sterilized for economic reasons.

To investigate the criticism that an increasing number of women were resorting to sterilization even though they had few children, we examined the relationship between the number of sterilization cases and the number of living children. The results were as follows:

TABLE 4

Number of Sterilizations by Number of Living Children

Living children	0	1	2	3	4	5	6	Total
Sterilizations—Female ...		3	9	19	14	4	3	52
Male			2		1		1	4
Total	0	3	11	19	15	4	4	56

As far as Joban was concerned, 75% of the sterilizations were in families with three or more children, and 95% in families with two or more children, so that the criticism was unfounded.

Company Attitude towards Programme

At the inception of our programme neither the company nor the workers were what might be called co-operative. The latter believed in the popular slogan, Ichizan Ikka—all Joban people belong to one family—which was more conducive to the production of coal than to an interest in controlling family size.

Reference to the age pyramid of the Joban population indicated to us that when the swollen part of the gourd, constituting those who were children in 1953, advanced into the working age groups, hardship would face the increased number of workers seeking employment. Fortunately or unfortunately, this time arrived very soon. Unable to meet the increasing demand for employment, the company greeted our programme with eager co-operation, especially in view of the obvious satisfaction expressed by the wives who were successfully practising

birth control.

Co-operation reached a point in 1956 where the company offered to pay part of the cost of contraceptives and salaries of midwives. For their striking interest and co-operation with the family planning programme, the company was awarded a prize in 1956 by the Ministry of Welfare.

News of these developments exerted much influence upon many industries in Japan, and more than eighty industrial enterprises have started family planning programmes.

Bibliography

1. Koya, Y. et al., "The New Population Phenomenon and its Countermeasures; a Study of three Rural Villages". Japanese Medical Journal, no. 1439, 1951.
2. Koya, Y. et al., "A Study on Model Villages for Family Planning", Japanese Medical Journal, no. 1475, 1952, and Archives of Population, no. 1, 1952. The Population Association of Japan.
3. "Present Situation of Family Planning among Farmers and Coal Mine Workers in Japan". Proceedings of the World Population Conference, New York, 1955.
4. Koya, Y. et al., "Five Years of Family Planning in three Japanese Villages". Report of Proceedings of the Fifth International Conference on Planned Parenthood". October, 1955.
5. Stix, R. K., and Notestein, F. W., Controlled Fertility. Baltimore, 1940, p. 38.
6. Koya, Y., "The Program for Family Planning in Japan", Third International Conference for Planned Parenthood. Bombay. India, Nov. 1952, and Eugenical News, March, 1953, p. 38.
7. Koya, Y. et al., "Seven Years of a Family Planning Program in Japan", The Milbank Memorial Fund Quarterly, October, 1958, Vol. XXXVI, no. 4, pp. 363-72.
8. Koya, Y. et al., Research on so-called "bottleneck" for diffusion of Family Planning Technique. Mimeographed report presented to the Ministry of Welfare, 1958.

CHAPTER IV

FAMILY PLANNING AMONG JAPANESE ON PUBLIC RELIEF

THE POPULATION PROBLEM COUNCIL established in the Japanese Cabinet made the following recommendations on November 29, 1949: "In order to prevent a sharp increase in the population which will have adverse effects on the economic reconstruction and promotion of public health in this country, and to bring a sound cultural life to realization, it is considered necessary to furnish married couples with necessary information on contraception by teaching reasonable methods and to give guidance of conception control to all classes of our nation so that married couples can regulate the number of births freely and voluntarily by means of conception control."

Here we will discuss family planning in Japan in regard to a specific point in the above statement: **"to give guidance of conception control to all classes of our nation."**

Why did the Population Problem Council recommend such a matter to the Japanese Government? It did so obviously because it feared that the average quality of the next generation would certainly deteriorate if conception control were practiced faithfully only by a certain class of people, while other classes showed little or no interest. This is not to say that the Council had sufficient concrete knowledge to say with confidence in which class more children were desired and in which the number of offspring should remain small. Behind the statement lay the belief that the danger mentioned above might be averted to a certain degree if conception control were spread equally among all classes.

By Yoshio Koya, M.D. with the Assistance of Dr. H. Kubo, Dr. M. Muramatsu, Dr. S. Yuasa, Dr. H. Ogino, and Dr. S. Agata.

From *Eugenics Quarterly*, Vol. 4, No. 1, March, 1957. This is published in the *Japanese Medical Journal*, No. 1692, September 29, 1956, too.

Acknowledgment: The author is greatly indebted to Mr. Frederick Osborn and Dr. Dudley Kirk, Population Council, Inc. for their valuable assistance and encouragements to our experiment and survey.

Seven years have elapsed since these recommendations were issued, but it is all the more important today to consider the specific recommendations for guidance in conception control. The strongest reason for this is the great decrease in the Japanese death rate in recent years. The rate was as low as 7.8 in 1955, a rate almost equal to, or perhaps even lower than, the occidental low level. Decrease in infant mortality is particularly conspicuous. If present conditions continue, of a hundred newborn infants only 3.9 would die before their first birthday. Also the death rate during the earlier years of life has been lowered considerably. As a result only 7 to 8 per cent of girls born would die before they reach marriageable age and the remaining 92 to 93 per cent would mostly participate in the reproduction of the next generation through marriage.

Comparison here between the present situation and that of the prewar years is interesting. If we review the life table for 1935, we note that of a hundred newborn infants, more than 10 were dead before their first birthday and 25 to 26 failed to reach marriageable age.

The real significance of these developments, as Frederick Osborn has pointed out, is the fact that death can no longer exert a selective influence. And, if it can no longer do so, then birth becomes the important factor instead. In other words, the average quality of the next generation today depends more upon this: which class with what quality has a higher birth rate than others?

When we examine closely the present status of the dissemination of family planning practice in Japan with special attention to quality not a few problems are found. The most important is that family planning has become widespread very rapidly only among the intellectual class and is not easily disseminated among extremely poor people. ✓

In saying this, I am not trying to imply that the poor are inferior as to quality, of course. As our study has clearly revealed, a person's poverty has nothing to do with his qualitative characteristics, especially in Japan today. There are a number of families who have become extremely poor because of financial difficulties due to war damages or to the rapid postwar changes in social institutions. Also many have been brought to their present misery because of disease, notably tuberculosis, which has deprived them of the means of subsistence.



Despite all these reservations, however, I cannot but look on the present situation with anxiety where the practice of conception control is thus unsatisfactorily disseminated among a particular class of people, with the result that many unwanted children are born year after year. It is hard to believe that leaders of future Japanese cultural development could be produced from among children born unwanted, poorly educated, and raised in undesirable circumstances. No doubt some are endowed with superior genetic quality even among them. But obviously it is not easy for such quality to develop to the full if their surroundings remain unfavorable. This is not simply common sense but is well supported by scientific evidence.

In view of these considerations, the Japanese Government recently has taken a step forward to enforce a program for dissemination of contraceptive practice among the extremely poor. This may well be called a timely action on the part of the Government. However, the actual enforcement of the program seems to have met unexpectedly with various difficulties and the results so far are not so good as anticipated. Yet this program by all means must not only be enforced but carried out successfully.

An Experiment and Survey in Family Planning

With a view to contributing to the planning of such a conception control program, we started an experiment and survey in April 1953 with those who were receiving public relief from the Japanese Government. The experiment is now in its fourth year, and data for the third year have become available recently. Here the results of the experiment will be described, using chiefly the findings of the third year.

Our experiment was an intensive educational program in family planning in a specific test area, and our survey was a nation-wide one of families receiving public relief. For the experiment, 418 families were chosen in 9 districts of Katsushika Ward, Tokyo. For the survey 1,789 families were chosen in 63 districts extending from Hokkaido to Kyushu. The present report is concerned mainly with the educational experiment in family planning. A mass of material is contained in the nation-wide survey which does not permit satisfactory reporting here,

but a few of the results will be referred to for the purpose of comparison.

COMPOSITION OF THE POPULATION: The selection of the 418 families for the experiment was made under certain conditions. The first was that no family be included in which the wife was 50 years old or over. Secondly, the husband and wife must be living together. As a result extremely few old people were included and there were sharp age indentations between 20 and 40 years of age. In this population of 418 families, the average age of husband has been computed to be 43.3 years, and that of wife, 36.9. Similar results appeared in the nationwide survey of families on public relief, namely 41.7 and 35.3 years, respectively, for the husband and wife.

CIRCUMSTANCES BEFORE AND AFTER PUBLIC RELIEF: Through investigation we intended to learn the reasons, direct or indirect, for these families receiving public assistance.

Our first inquiry was concerned with time of arrival in this area. Of the 418 families, 260, or 62 per cent, moved into the area after 1943. Especially numerous were the families who settled during 1944 and 1945 when the air raids were most severe. Most of the families were driven into the area, having been deprived of their homes and property.

The unemployed, of whom there had been none before relocation, numbered 162, or 39 per cent. Factory workers or workmen had decreased to about one-third, clerks to about one-fifth, and shopkeepers or peddlers to less than one-third. Increases were shown in laborers, odd-job men, and ragmen.

Most of the unemployed at present have had only elementary or middle-school education, but even here there are 14 families with husbands graduated from colleges or universities. Also 3 husbands reported to be college graduates are working as laborers or odd-job men. These findings show that unusual changes have occurred in these families' circumstances since the end of the war. What caused them to fall to their present circumstances? According to our investigation the answer is simply disease of one kind or another. Of the 418 husbands under observation, only 157 can be regarded as healthy or normal. The remaining 261, or 62 per cent, are either actually suffering from disease

or are unwell. Of the diseases reported, the most important was tuberculosis, with an incidence of 40.0 per cent.

Inquiries were made of these families as to their income status as well as their housing conditions. Actual earnings of their own differed considerably from one family to another, but as many as 162 families had no employment at all, and their average monthly income was only 4,879 yen, or about \$13.6. To supplement this, on the average 4,541 yen comes from the national treasury, making a total monthly income for these families of 9,420 yen, or approximately \$26.2.

These findings are in accord with the income of the 1,789 families in the nationwide survey, where the average own income was 5,085 yen and average Government assistance 4,017 yen, making a total monthly income of 9,102 yen, or \$25.3. It is most difficult to imagine how such families with perhaps as many as 5 or 6 members can live within such a low income.

Information about housing conditions in these 418 families is also of interest. Those with only one room numbered 192, or 46.0 per cent, while those with two rooms numbered 155, or 37.1 per cent. Few families could afford more than two rooms. As many as 5 or 6 persons have to live in this limited space, and the inconveniences and health hazards of such crowded quarters are beyond imagination. It was found that 27.9% of all the deaths in this group were due to infectious disease. In some of the homes children were frequently seen crowded together in a small room with a tubercular mother in the bed. And 44.3 per cent of all the couples shared the same bedroom with children over ten years of age, with consequent undesirable effects upon the sex education of the children.

REPRODUCTIVE ACTIVITIES: In order to institute an intensive educational program of family planning among these families, it was necessary for us to know their previous reproductive histories and the possibilities of their accepting our teaching in family planning. Our investigation included the number of pregnancies, natural miscarriages, induced abortions, child deaths after birth control, and living children.

Table 1 is a summary presentation of information obtained and tabulated on consultation cards. We found it particularly valuable to

TABLE 1

Number of Pregnancies	0	1	2	3	4	5	6	7	8	9	10	11	12	Total	Average per family	Average of 1789 Families
Number of Families	14	27	43	71	81	70	44	35	18	8	5	1	1	418		
Total Number of Pregnancies in All Families	—	27	86	213	324	351	264	247	145	72	50	11	12	1802	4.4	4.5
Number of Natural Miscarriages	—	—	1	5	16	20	16	15	9	3	6	—	—	91	0.2	0.4
Number of Induced Abortions	—	—	6	14	18	22	32	22	20	19	9	1	3	166	0.4	0.3
Number of Child Deaths	—	—	4	23	9	24	21	31	14	11	6	1	3	147	0.4	0.3
Number of Living Children	—	27	75	171	281	285	195	179	102	39	29	9	6	1398	3.3	3.7

TABLE 2

	Guidance Desired	Guidance Not Desired	Opinion Not Known	Total
Number of Families	264	147	7	418
Per cent	63.1	35.2	1.7	100.0

TABLE 3

REASON FOR NOT DESIRING GUIDANCE	No.	%
Either the husband or the wife is sick, hence no marital relations	71	48.3
No pregnancy has occurred over the past five years or more, so believe no control is necessary	29	19.7
Sterile (involuntarily)	9	6.1
Believe that child-bearing ages have already passed	4	2.7
Pregnant at present	5	3.4
Immediately after childbirth now	7	4.8
Have been sterilized	3	2.0
Have not yet decided to do something for conception control	1	0.7
Want children, no contraceptive measures are needed	18	12.3
Total	147	100.0

keep such cards at the time of personal interview, giving full details about previous pregnancies and deliveries, as well as the condition of living children.

Table 1 shows that each family on the average has recorded 4.4 pregnancies, 0.2 natural miscarriages, 0.4 induced abortions, and 0.4 child deaths after birth control, the number of living children per family being 3.3. If these figures are compared with those obtained in the nation-wide survey of 1,789 families, interesting observations can be made. The average number of pregnancies differs very little between the two, but in the nation-wide group more natural miscarriages and fewer induced abortions are found, since it includes some rural population. The number of living children in the nation-wide survey exceeds that of the 418-family group by 0.4.

READINESS TO ACCEPT FAMILY PLANNING EDUCATION:
Before initiating our educational program, we investigated their readiness to accept such a project: the extent to which they actually wanted to learn about conception control. The results shown in Table 2 were almost completely opposite to what was generally believed. It had been thought that people belonging to this social class were very indifferent to conception control or family planning, and consequently would be the most difficult group to handle. On the contrary, it was discovered 63.1 per cent, or 264 out of the 418 families, actually wanted our teaching. There were only 147 families who did not desire guidance, but the majority of these either had no need for controlling conception (e.g., because they were sterile or had been sterilized) or at least believed they needed no such information (e.g., because it was immediately after childbirth or because they thought the wife had already passed child-bearing age) as shown in Table 3.

However, among those with no interest in conception control, there were 18 families who stated it was because they wanted children. When we examined more closely the families who wanted children, one childless family was found, 8 families with only one, 6 families with 2, and only 3 families with 3 or more children. This kind of finding may appear in any other social group and does not prevent us from saying that the group as a whole was more than normally cooperative. Thus, among

those families whom we thought should be practicing conception control, 98.5 per cent actually desired to do so.

Why, then, did they want to control conception so strongly? The following may clarify the situation:

	Per cent
For economic reasons	87.9 ✓
For both economic and wife's health reasons	6.8
For reasons related to wife's health	1.9
Other reasons	3.4

LOCATION AND NUMBER OF PERSONAL INTERVIEWS:
None of the locations generally used for contraceptive consultation seemed practical for families on public relief. Bringing together a group of people to a certain place, so-called "group work," seemed futile in most cases. The most important problem was how to find an appropriate physical set-up for the guidance program.

We finally discovered a method which proved workable. Use was made of the local welfare agencies where these people on public relief must come once a month without fail. Taking advantage of their attendance at these agencies, we took them to separate rooms and gave necessary instructions about family planning.

No proper equipment or facilities are available for teaching family planning in these agencies, of course. For example, it is hardly possible to give instructions in the use of a vaginal diaphragm. Therefore, the selection of recommended methods was of necessity limited.

Guidance was given rather frequently at first, but as the program progressed teaching was reduced to, say, once every other month. But the educational gap between these infrequent visits of our staff was usually filled by the aid of local case workers.

The personal interviews were conducted in the form of a very confidential talk. We were able to answer any questions raised, but perhaps this could not be expected of general family planning education under present conditions in Japan. However, it should be remembered that

whoever is responsible for the personal consultation, the attitude of the teacher is the most important factor. No matter what the question, not a shadow of scorn or blame must be shown. The key to ultimate success in such a consultation is the presence of confidence between the two individuals concerned. Success is solely dependent upon how much sympathy and good will the interviewer shows to these needy families.

RECOMMENDED CONTRACEPTIVE METHODS: Because of the restrictions stated above, recommended methods were limited for the most part to condoms and tablets. The use of sponges or jellies with applicators is not fitting to those who live a simple life. Contraceptives were given free of charge after detailed explanations as to their actual use, and the amount given was sufficient to last until the next interview.

The rhythm method was never recommended except when specifically desired, because we already knew that this method was apt to fail when used among families such as these.

RESULTS OF EDUCATIONAL WORK: In the group of 418 families a certain number of families have dropped out of our project because they became ineligible for public relief. At the same time other new families have been added. Thus, the total number of families continuously observed for three years is 277, and the following results refer to these families.

NUMBER OF PREGNANCIES AND PREGNANCY RATE: Table 4 shows the trends in this respect. In the year previous to the initiation

TABLE 4

Year	Before Guidance	End of First Year	End of Second Year	End of Third Year
	Apr. 1952- Apr. 1953	Apr. 1953- Apr. 1954	Apr. 1954- Apr. 1955	Apr. 1955- Apr. 1956
Number of Pregnancies	92	52	48	33
Pregnancy Rate	53.9	27.6	24.5	16.5
Number of Live Births	44	14	16	11
Number of Induced Abortions	45	35	26	22
Number of Miscarriages and Stillbirths	3	3	6	0

of our project, the 277 families recorded 92 pregnancies. In the third year only 33 pregnancies occurred, a decrease to 32 per cent of the number before the project. This reduction in the number of pregnancies means that the contraceptive instruction had fairly great success, we believe.

More exact evaluation of the results, however, calls for the use of the pregnancy rate. We have calculated the rate according to the Stix-Notestein method and found that it decreased from 53.9 for the year previous to the start of our project to 16.5 for the third year of the work, 30.6 per cent of the figure for the year before our work started. This is a remarkable and rapid effect.

INDUCED ABORTION: In our experiment emphasis was placed not only upon correct and faithful practice of contraception but also upon the reduction of induced abortions. As a result induced abortions have decreased from 45 to 22 in the course of three years. In a group on public relief even a decrease in induced abortions of this extent can be considered fairly good, because when a woman is protected by public relief an induced abortion can be performed on her without charge by a well-trained doctor in a hospital or dispensary if she so desires. Such an abortion is part of the medical social services given to anyone who comes under the Daily Life Security Law. Furthermore, the Eugenic Protection Law has a provision that an induced abortion be performed "for economic or physical reasons." The families we have handled are a case in point of this specific provision, and, because of that, we can hardly sweepingly condemn their frequent resort to induced abortion. Considering the circumstances, pretty good results have been obtained in checking their frequent use of induced abortion.

NUMBER OF LIVE BIRTHS: Some pregnancies were terminated by induced abortion for reasons stated above, and some resulted in miscarriages or stillbirths. The remainder constitute the total number of live births observed. If a comparison is made between the births the year previous to our project and the third year, a decrease from 44 to 11, one-fourth, has been recorded. Figures for the birth rate have not been given, because our group does not include wives over 50 years, hence is not comparable with other groups.

Conclusions

Five years have passed since the Cabinet agreed to adopt the dissemination of family planning as a national policy in Japan. Today the extent of its diffusion is said to be nearly 35 per cent, and at the same time the upward trend of induced abortion thus far observed has recently been slowing down gradually. This progress is gratifying, but the next big problem is to ascertain any uneven or unbalanced dissemination among various groups differing geographically, occupationally, or socio-economically.

Family planning seems to be practiced least successfully in the outlying, less civilized rural areas where most of the villages without doctors are found as well as among those sunk in poverty in the cities.

Our findings from our three-year experiment in teaching family planning and our nation-wide survey are of great value for the successful enforcement of the Government program for disseminating family planning among the extremely poor, we believe. Many interesting and significant points came out, but most important was to discover a suitable teaching approach to people. The problem is not only to find an appropriate place, but a study of "by whom, in what kind of place, and how" in family planning should be discussed. In regard to the question of "where" we took advantage in our experiment of visits to local welfare agencies. However, this approach may not be applicable under the present system of the health and welfare administration in Japan. Conditions must be carefully examined and considerations in relation to the budget weighed before health centers can be used effectively for such purposes. Such a program will almost certainly meet with failure if people are merely ordered to come to certain places for guidance.

In regard to the question of "by whom," it should be well understood that the attitude of the counselors is of great importance, particularly in dealing with families in extreme poverty. A feeling of inferiority is often found among these groups which is very apt to result in lack of cooperation or even in resistance to the program.

In solving the question "how," a way of teaching must be found which fits into actual living conditions. It is especially necessary to teach these families about contraceptives which they can afford to use

and which are not rendered impracticable by their housing situations. In our case, we recommended mainly the use of condoms and tablets, but vaginal diaphragms could be used in some instances.

The Japanese Government launched a program for the teaching of family planning in this specific social class last year. Still in its early stages, it may be expected that many difficulties will arise. It is our earnest hope, however, that the Government's efforts will have great success because the program has so much significance both from the standpoint of social policy and racial selection.

CHAPTER V

A STUDY OF INDUCED ABORTION IN JAPAN AND ITS SIGNIFICANCE

PART I

SINCE promulgation of the Eugenic Protection Law in July, 1948, and the passage of liberalizing amendments in May, 1949, the number of induced abortions has increased greatly. Even if only the reported abortions were counted, the total number was 246,104 in 1949; 489, 111 in 1950; 638,350 in 1951; and 805,524 in 1952. The recent figure would probably reach some one million several hundred thousand, if the "unreported, secretly performed" abortions were included.

This phenomenon is surprising and striking not only to the Japanese people but also to foreigners. The Japanese Government fearing its undesirable effects upon mothers' health among other things, decided

By **Yoshio Koya, M.D.** and **Minoru Muramatsu, M.D.** with the Assistance of **Dr. S. Agata, Dr. T. Koya.**

From the **Milbank Memorial Fund Quarterly**, July 1954, Vol. XXXII, No. 3. The original Japanese article on this subject appeared in the Japanese Medical Journal **Nihon-Iji-Shimpo**, No. 1539, October 24, 1953. This English translation is based upon that article, but it does not correspond to the original precisely.

Acknowledgment: We are sincerely grateful to the **Rockefeller Foundation** for financial assistance in supporting this study. Also, acknowledgment must be made to **Dr. O. R. McCoy** of the **Rockefeller Foundation** who has given valuable advice and suggestions to us in the actual conduct of this survey, and to **Dr. M. C. Balfour** of the **Rockefeller Foundation** as well as **Dr. I. B. Taeuber** of **Princeton University** for their cooperation in reviewing the questionnaire used in the present study.

In addition, we are greatly indebted to the following health centers of Tokyo, Kanagawa and Shizuoka Prefecture for their incalculable assistance, without which our survey could not have been made: Nakano, Fukagawa, Shibuya, Tsurumi, Yokohama-Naka, Yokohama-Nishi, Yokosuka, Odawara, Atsugi, Hiratsuka, Shizuoka, Numazu, Yoshiwara, Fujinomiya, Shimizu, Kawasaki-machi and Mishima.

upon a fundamental policy to replace this widespread resort to abortion with the practice of contraception as far as possible. This policy is based on the decision made in the Cabinet Council of October 26, 1951, which since then has been implemented by various measures toward this aim.

Can we, then, expect successful results out of these Government measures? In this respect, I am not necessarily optimistic, because, there has been no evidence as yet which indicates a decline in the number of induced abortions performed.

Under such circumstances, there has appeared a group of people recently which criticizes these measures claiming that they have brought about more induced abortions rather than a suppression of them. Also, there are some other groups with different opinions. For instance, some say that it is due to the tendency among practicing gynecologists to want to earn more money these days, or others want to interpret the situation as a manifestation of moral decay in the Japanese society.

The author himself, however, does not consider these things so simply. Of course, there must be a number of cases where the above mentioned reasons hold true, and yet he does not believe that they precisely represent the real explanations as to the most deeply underlying reasons for the continued increase in abortions. More fundamentally there must exist some socio-economic or ideological reasons. In any event, this phenomenon requires more thorough investigation, because, it is through such means that we can bring these differing opinions on this point along the right direction, and also that we may be able to find out better measures for preventing the further increase of abortions. Furthermore, such investigation and analysis will undoubtedly contribute to the progress of demography peculiar to Japan since this is an extraordinary phenomenon which has abruptly appeared in modern Japanese society.

These considerations were the main motivation which led us to attempt to conduct the present study since January, 1952. Consequently, our survey was bound to be intensive and of small coverage rather

than extensive and of large coverage. For that reason, the districts surveyed were confined only to Keihin and Tokai regions (regions including such prefectures as Tokyo, Kanagawa, and Shizuoka), and the contents of the questionnaire used were so detailed that there were about several dozens items questioned. The samples of the questionnaire were sent to the United States before the final printing was made in order to secure opinions from two specialists in this field so that it might be as complete as possible.

What is particularly important to mention here, in the next place, is the methods employed in our house-to-house interviews. In the present survey, no other persons, such as public health nurses, were relied upon. Only the three medical doctors on the staff of the Department of Public Health Demography (two were gynecologists) conducted the personal interviews.

The districts surveyed were all in Keihin and Tokai regions, and approximately 500 families were interviewed in each of three geographical groups—large cities, medium-sized cities, and rural areas. When the analysis of data was made, however, the number of families tabulated was reduced to 462 in large cities, 464 in medium-sized cities and 456 in rural areas (1,382 families in all) because of the necessary omission of some ineligible families from each of the three groups. The survey was limited to those women who had their first induced abortion approved by a local Eugenic Protection Committee under Article 13 of the Eugenic Protection Law during the period August 1, 1949, to July 31, 1950. In the main, this article of the law permitted induced abortion with approval when “pregnancy or delivery might markedly injure the health of the mother because of her physical or financial condition”.

PART II

What I am intending to describe in the present report is somewhat of a preliminary, generalized nature, but it is of great importance if viewed from the motivation and purpose whereby the present study was started. The results of the detailed analyses of data will be published later.

TABLE 1

Distributions, of 1,382 wives with history of induced abortions,
by number of induced abortions experienced

SIZE OF COMMUNITY	Percentage Distribution					
	Total	1	2	3	4	5
	Number of Induced Abortions Experienced					
Total	100.0	77.4	18.5	3.4	0.6	0.1
Large Cities	100.0	69.1	24.4	5.2	1.1	0.2
Medium-Size Cities	100.0	77.4	17.9	4.1	0.4	0.2
Rural Areas	100.0	86.0	12.9	0.9	0.2	0.0
	Number of Wives					
	Total	1,070	225	47	8	2
Total	1,382	1,070	225	47	8	2
Large Cities	462	315	113	24	5	1
Medium-Size Cities	464	359	83	19	2	1
Rural Areas	456	392	59	4	1	0

The first thing we should like to know is in which of the different communities, large cities, medium-sized cities, or rural areas, induced abortion is most prevalent, and what the differences are in magnitude among the three groups. Although the data from our survey are not appropriate to answer these questions, some interesting information was obtained in this respect. That is the information which can be derived from Table 1, which represents the distribution of 1,382 wives by the number who had repeated abortions.

In rural areas, 86.0 per cent had induced abortion only once, whereas in medium-sized cities the figure is 77.4 per cent and in large cities, 69.1 per cent; thus, the proportion decreases stepwise. For the more general observation, the average number of induced abortions per woman has been calculated as follows:

Large Cities	1.4 times
Medium-Sized Cities	1.3 times
Rural Areas	1.2 times

The fact that the rate of repetition goes up from rural areas to large cities can be considered an indication that the total number of women who perform induced abortion increases from rural areas to large cities.

TABLE 2**Age distribution of wives in the survey**

Age Group	Number	Per Cent
Less than 20	7	0.5
20—24	125	9.0
25—29	305	22.1
30—34	388	28.1
35—39	369	26.7
40—44	177	12.8
45—49	11	0.8
Total	1,382	100.0

In what age group of women is induced abortion most likely to be resorted to? This is another question we want to answer. The 1,382 women were distributed by five-year age group on the basis of age at the time of abortion as is shown in Table 2.

Those women aged between 30 and 34 give the highest proportion and the next group is 35—39 years of age, five years older than the first, and the third is 25—29 years of age which is younger than both of the above two groups.

TABLE 3**Correction of age distribution of wives in the survey on the basis of the age distribution of all wives in the districts surveyed**

Age Group	Basic Age Distribution Per Cent (a)	Age-Distri- bution in Our Survey (b)	Corrected Age Distribution Per Cent $\left(\frac{b/a}{\Sigma b/a} \times 100 \right)$
Less than 20	8.8	0.5	0.9
20—24	14.6	9.0	10.0
25—29	19.1	22.1	18.7
30—34	17.3	28.1	26.3
35—39	15.8	26.7	27.3
40—44	13.2	12.8	15.7
45—49	11.2	0.8	1.1
Total	100.0	100.0	100.0

It must be considered in this connection, however, that the fact that there were many women who performed induced abortion in particular age groups in a selected community may be merely the result of accidental concentration of women in those age groups in that community, or that the contrary may be true. In order to generalize this finding, the actual age distribution of women in that given community must be known. In our study, however, this information was not available.

Fortunately, however, the information as to the percentage distribution of the age of wives in 119 districts, including large cities, medium-sized cities and rural areas, was available from another survey we have conducted. On the basis of this distribution, our age composition was corrected as is shown in Table 3.

When such manipulation was done, the order of the first and second age groups was reversed, but the third has remained the same; in other words, it was found out that those who are most likely to resort to induced abortion are the wives between 35 and 39 years of age, the wives 30 to 34 years of age follow them, and that those wives aged 25 to 29 retain the rank of third.

Regardless of the reversal in the order between the first and the second, it is to be noted that the women in the first and second groups, when summed up, represent approximately 54 per cent of the entire body. In other words, we may say that the majority of induced abortions in this survey were performed in relatively older wives, 30 to 39 years of age.

If it is assumed that this observation can be applied to the country as a whole, it is of great interest to note that it is women of middle age who are really responsible for the marked increase of induced abortions in Japan. This finding can, at least, indicate the fallacies involved in the observations that induced abortion has been mainly resorted to by extremely young women, or younger wives, as have been frequently claimed by various groups.

Incidentally, how many living children did these middle-aged

women have at the time of abortion or last abortion? The answer is given in Table 4.

TABLE 4

Distribution of wives in the survey by number of living children

No. of Living Children	0	1	2	3	4	5	6	7	7+	Total
No. of Women	37	201	245	270	227	178	118	72	35	1,382
Per Cent	2.7	14.6	17.7	19.5	16.4	12.9	8.5	5.2	2.5	100.0

According to Table 4, the group of women with three children is largest, followed by the group of women with two children. This result agrees with the aforementioned distribution of women by age. Of course, these two distributions do not necessarily relate to the same individuals, but even so it is valid at least to say that women who are especially inclined to resort to induced abortion are those 30 to 39 years old, the age of mature discernment, having two or three children.

PART III

All of the women included in this study must have had a strong reason to limit the number of their children, or otherwise they would not have had an induced abortion. In this connection, it is interesting to ascertain the proportion of women who at one time or another had practiced contraception prior to having an induced abortion. Only 372 or 27 per cent had done so. This figure is an indication of the amount of knowledge about contraception which prevailed in the group of women in the study. However, since this classification does not take into account "faithfulness" of use, it cannot be used as an indication of the effectiveness of contraceptive methods. Also, there were some women who deliberately stopped contraceptive measures in order to become pregnant and then later, because of changed circumstances, had an abortion.

Much information was obtained concerning such things as reasons for practicing or not practicing contraception and sources of information. Detailed analyses of these data will be published later. Suffice it to say now that for those who did not practice contraception, indifference and lack of sufficient knowledge were the most important reasons for not doing so. For those who did practice contraception, magazines and newspapers were the most common source of information. These findings emphasize the need for more extensive and more authoritative educational measures to promote contraception.

PART IV

Briefly speaking, the main reason for the great increase of abortions in Japan is the family economy. In other words, it is nothing but a reflection of the national economic situation on the individual household economy. This is the most essential finding obtained in the present survey, and there are a good many facts which endorse the validity of this understanding. For example we made an exceedingly detailed questioning as to the direct motives which led these women to perform induced abortion. In relation to their first induced abortion, there were only 237 wives out of 1,382, or 17 per cent, who stated the reasons of abortion as principally health reasons; all other reasons given were related to the fear of difficulties in household financing in one sense or another.

In addition to these socio-economic reasons, there is a factor of the sex of the living children which can also constitute a motive concerning the performance of induced abortion. Is there perhaps a tendency for a woman to be more willing to have an induced abortion when she has at least one male child among the children ever born to her and living at the time of abortion?

In a foregoing section it was shown that among the wives with induced abortions the group with three children was largest and the group with two children was next largest. In the distribution of the families by sex of children, can we find out any influence of selection? In today's Japan where the predominance of man over woman mostly

still exists in her traditional family system, it may, probably, be pertinent to look into this particular aspect.

Of the 1,382 families in our study, there are 201 with one child, 245 with two children and 270 with three children. If these families are classified by the combination of sex of children the results are those given in Table 5.

It can be noticed readily from this table that in each case, there are more families with only male children than those with only female children, and that, furthermore, there are more families with two boys and one girl than those with one boy and two girls in the case of three-child families.

TABLE 5

Distribution of wives with one, two, and three living children, by sex of children

Number of Living Children, By Sex	Number of Couples
One-Child Families, Total	201
Male Child	108
Female Child	93
Two-Child Families, Total	245
Two Males	69
One Male and One Female	129
Two Females	47
Three-Child Families, Total	270
Three Males	39
Two Males and One Female	105
Two Females and One Male	91
Three Females	35

These differences, however, may or may not be due to mere sampling errors, and hence a more detailed statistical process is required to clarify this relationship. As one method of reasoning, it is to be expected that the observed number of families with male children would be higher than the theoretically expected number from the law of probability, if the selection because of this particular desire for male child is actually working. The theoretically expected number of families can be derived from the binomial expansion of $(p+q)^n$, where n is the num-

ber of children, p is the probability of a child being born as a boy and q that as a girl. According to the statistics of the country as a whole, the values of 0.51 and 0.49 should be given to p and q respectively.

The author has thus made a comparison between the observed frequency distribution and the expected distribution by means of curve fitting, but the differences between the two did not prove to be significant, and chi-square test in each case turned out as follows:

In the case of three-child families	$P=0.70$
In the case of two-child families	$P=0.21$
In the case of one-child families	$P=0.43$

Can we, then, conclude from these results that the easy feeling of having had already at least one male child is not working at all in the motivation leading to family limitation? The answer is probably no. In spite of these relatively large values of p , the author wants to emphasize the fact that the distribution is weighted toward male children in each of these cases, which are the families where induced abortion is highly prevalent. If more families were included in our study, then the tendency for a greater number of abortions to occur in families with a male child probably would be statistically significant. However, since the difference is not great, the desire for a male child cannot be considered an important influence on the behavior of present-day Japanese parents in limiting the size of their families. Economic considerations are much more important. A great many social changes have occurred in the postwar period of Japan which have exerted strong influences in various respects, but what we can state definitively is that the common desire not to lower even a little bit the present level of living has been strengthened. In cities, in particular, there have appeared many temptations of a post-war nature. Moreover, in rural areas, they are beginning to be seriously concerned about the newly adopted system of equal inheritance. Under such conditions, it is quite natural for the people considering their own incomes to pay attention to the limitation of the number of children which is something in their own control.

The author believes firmly that here lies the greatest and deepest cause of the recent sharp rise in the number of induced abortions in Japan.

PART V

Thus far considerations have been made on the causes and motivations of the tremendously widespread prevalence of induced abortion recently occurring in Japan. In the following paragraphs, let us make some observations on the influences of induced abortion.

The first problem to be discussed is the effect of induced abortion on the so-called family limitation, and the second is the effect it has upon mothers' health. The former presents further questions which are of great interest and are closely related to it—for instance, the influence of the induced abortion upon the reproductive process of Japan's population and the measurement of its magnitude—but only the factual analysis of the materials in respect to how soon pregnancy took place after the induced abortion will be touched upon here.

Of the 1,382 families surveyed, women who became pregnant again after abortion numbered 679, or 49.1 per cent. The classification of these women is given in Table 6.

The number of pregnancies would certainly continue to increase after the date of our interview, but the rate of increase would diminish acceleratively, as is indicated in the table, and so, for the sake of discussion, it will be disregarded. From this table it is seen that almost half of the women in the survey became pregnant again within eighteen months

TABLE 6

Distribution of 679 wives in the survey who became pregnant after abortion, by length of time between abortion and the following pregnancy

Length of Time	No. of Women	Per Cent
Less Than 6 Months	294	43.3
6-11 Months	209	30.8
12-17 Months	134	19.7
18-23 Months	31	4.6
24 months or Above	11	1.6
Total	679	100.0

after the induced abortion, and, moreover, approximately 43 per cent of those women who became pregnant again conceived within six months after the abortion. This fact certainly serves as advice which should go to the heart of the average woman who is likely to overestimate the effect of induced abortion on family limitation.

What are the effects of induced abortion, in the next place, upon mothers' health? In this respect there have been a few observations made to date, but the materials presented here are highly reliable and valuable in that they were collected by the three medical doctors through the detailed personal interview. One drawback with this survey is, however, that no fatal cases due to induced abortion were included, since we could only visit the women who were living at the time of interview.

The number of induced abortions tabulated in this respect was 1,712. Of this total, 903 cases were reported to have experienced no post-operative complications, whereas the remaining 809 (47.3 per cent) were reported to have had abnormal conditions of one kind and/or another. The figures are given in Table 7, classified according to order of abortion.

Aside from those who died after the abortion, it is to be noted that the number of women who experienced complications, severely or slightly, is much greater than was expected and that the proportion of post-operative undesirable experiences increases with the number or abortions experienced.

TABLE 7

Post-operative complications in relation to order of induced abortions among women in the survey

Order of Abortion	No. Without Complications	No. With Complication	Per Cent of Those With Complications
First Abortion	731	620	45.9
Second	144	152	54.4
Third	25	30	54.5
Fourth	3	5	
Fifth	—	2	
Total	903	809	47.3

An investigation has been made as to the kinds of these complications classified by the complaints made, but the detailed information will be given later in another publication. In any event, these figures tell us that induced abortions are being performed at a considerable risk of harmful after-effects. It is considered to be of urgent necessity to enlighten the general public of this fact, especially those who believe induced abortion to be a far simpler method of family limitation than contraception.

CHAPTER VI

WHY INDUCED ABORTIONS IN JAPAN REMAIN HIGH

THE 50 per cent decline in the Japanese birth rate in the decade following World War II is one of the amazing events in demographic history. In two years alone, the rate declined by 23 per cent, from 33.0 per thousand population in 1949 to 25.4 in 1951. At present the rate is about 17, a level on a par with Western European countries and well below the United States figure of 24.

This extraordinary decline has aroused world-wide interest. Enthusiasm, however, has given way to concern, both in and out of Japan, with the realization that the major part of the decline is attributable to induced abortion rather than to contraception. Many reasons have been advanced to account for this widespread use of abortion, such as the liberalizing amendments to the 1948 Eugenic Protection Law, the moral decay of Japanese society after the war, the attitude of physicians toward their patients and, not least of all, the response of the people to the Government's efforts to promote family planning.

The number of officially reported abortions mounted steadily after the war, rising rapidly from over 250,000 in 1949 to over the million mark by 1953, since which time it has remained at a level of between 1.1 and 1.2 million per year. The significance of this figure can be appreciated in the light of the fact that there are 11 million married women in Japan 15 to 44 years old, meaning one abortion per year for every ten women in the child-bearing years. In Japan, abortion is permitted if the continuance of pregnancy or delivery threatens the health

By **Yoshio Koya, M.D., Professor, Nippon Medical College.**

From "**Research in Family Planning**", Princeton University Press, 1962,
Editor, Dr. Clyde V. Kiser.

Acknowledgment: Some parts of computation were made by Mr. Masabumi Kimura and another part by Dr. Yoshio Furusawa and Dr. Yasuhiro Suzuki. I am thankful to them.

of the mother on account of her physical or financial condition. Its continued widespread use is a source of deep concern to the Government and other interested parties charged with the responsibility of protecting the health of women.

The question was widely discussed by experts in various fields—demographers, sociologists, physicians, caseworkers—at the All Japan Conference for Family Planning held last year under the joint auspices of the Japanese Government and the Family Planning Federation of Japan, but no definite conclusions were drawn to explain why Japanese women continue to resort to induced abortion. That the Japanese people are strongly motivated to limit the size of their families is self-evident from the low level of the birth rate, but why this is achieved largely through abortion instead of contraception is the pressing question.

In the various family planning surveys and programs undertaken by my colleagues and myself in the past decade, our direct aim was to ascertain the extent to which high birth rates could be reduced without an increase in induced abortions. Although the studies have been separately reported on, a further review might shed some light on this important question.

Accordingly, the author has consolidated the findings and figures of (1) the experimental studies on family planning at three Japanese villages, conducted from 1950 to 1957; (2) similar studies at three coal mines, conducted from 1953 to 1958; (3) the investigation into the bottle-necks encountered in the promotion of family planning in Japan, 1957 to 1959; (4) the 1958 study on the value of the rhythm method as a contraceptive technique; and (5) the various surveys of the attitude of the Japanese people toward family planning.

For the last item we are indebted to the Mainichi Population Research Bureau; the other studies were conducted by the writer and his colleagues.

For our six districts combined, that is the three villages and the three coal mines, we found a pronounced decline over the course of our guidance program both in the birth rate and in induced abortion, as is shown in Table 1.

In the year before the study, 28.3 per cent of the wives became pregnant compared with 8.5 per cent during the fifth year of the program. The pregnancy rate (Stix-Notestein) dropped 73 per cent during this period, from 37.3 to 9.9. Induced abortions, which were 6.3 per 100 wives in the year prior to the inception of the program, fell to 2.1 per 100 wives by the last year of guidance.

TABLE 1

Reproductive history before and during guidance program

	One Year Before Guidance	1st Year of Guidance	2nd Year of Guidance	3rd Year of Guidance	4th Year of Guidance	5th Year of Guidance
Population	15,889	15,692	15,809	15,993	13,264	9,501
Number of Couples						
Guided	2,194	2,230	2,219	2,183	1,686	1,645
Number of Live						
Births	435	401	287	227	147	95
Crude Birth Rate	27.4	25.6	18.2	14.2	11.1	10.0
Births per 1,000						
Couples	198.3	179.8	129.8	104.0	87.2	57.8
Number of Wives Who						
Became Pregnant	620	657	496	388	238	140
Per Cent of Wives Who						
Became Pregnant	28.3	29.5	22.4	17.8	14.1	8.5
Number of						
Pregnancies*	630	684	523	397	245	141
Pregnancy Rate						
(Stix-Notestein)	37.3	49.0	28.6	21.5	17.3	9.9
Number of Induced						
Abortions	138	205	191	143	82	35
Number of Induced						
Abortions per						
100 Wives	6.3	9.2	8.6	6.6	4.9	2.1
Number of Induced						
Abortions per						
1,000 Population	8.7	13.0	12.0	8.9	6.2	3.7

*The number of wives who became pregnant does not coincide with that of pregnancies, because some became pregnant twice a year, particularly after induced abortion.

What is noteworthy, therefore, is that the decline in the birth and pregnancy rates was achieved along with a notable decline in induced abortions, and here we have a complete record of all, not only reported, abortions. This was not the case for Japan as a whole, where reported abortions, which we know are understatements of the actual number, account largely for the drop in birth rates, a drop incidentally not so great as in our six districts.

The decrease in induced abortions was not easily achieved. Reference to Table 1 shows that in the first year of our program induced abortions reached 9.2 per 100 wives, which was 46 per cent above that of the previous year. It was not until the fourth year of the program that this rate was brought down below the pre-guidance level, and it took a full five years to achieve any really gratifying results. Since it takes experience and skill to practice contraception successfully, failure rates are bound to be high until these are acquired. This is the explanation for the increase in induced abortion at the initial stages of the guidance programs.

Data presented by the Mainichi Population Investigation Office clearly show that the desire for small families is growing rapidly, in rural even more than in urban areas, and that conception control is gaining ground as the means of achieving this goal.

TABLE 2

Percentage of married women under 50 years of age who were practicing conception control

	1950	1952	1955	1957	1959
Cities	23.7	34.8	37.7	44.3	46.8
Rural Areas	14.4	22.1	31.9	35.7	40.8
Salaried Men's Wives	25.9	36.9	39.7	49.1	50.7
Farmers' Wives	11.5	17.0	25.4	30.5	34.9

As can be seen in Table 2, the differentials between rural areas and cities and between salaried men and farmers in the percentage practicing contraception have narrowed considerably since 1950. Whereas in the cities and among salaried men's wives contraceptive

practice about doubled between 1950 and 1959, the percentage shows a threefold increase among farmers' wives and in rural areas.

The implications of the preceding tables may be summarized as follows:

1. The desire to limit family size is spreading very rapidly from urban to rural areas and from upper to lower classes.
2. New groups of people, particularly in rural areas and among lower classes, are starting to practice contraception.
3. At the start of contraceptive practice, failure is frequent.
4. People who fail in their use of contraceptive techniques often resort to induced abortion to achieve their goal.

In view of the growth of contraceptive practice noted above, it is a logical assumption that the continued high incidence of induced abortion (1) reflects a high failure rate in contraceptive practice, and (2) indicates strong motivation to limit family size. These deductions raise some important questions. Why and how do people fail in their use of contraception? Having failed, do people change their minds about continuing their efforts to control births?

TABLE 3

Contraceptive failures by method used

Method	Number	Per Cent
Safe Period	87	15.3
Condom	195	34.4
Condom + Safe Period	134	23.6
Diaphragm	3	0.5
Diaphragm + Safe Period	21	3.7
Tablets	27	4.8
Tablets + Safe Period	21	3.7
Jelly	17	3.0
Jelly + Safe Period	23	4.1
Sponge	5	0.9
Sponge + Safe Period	11	1.9
Withdrawal	1	0.2
Withdrawal + Safe Period	22	3.9
Total	567	100.0

Some light is shed on the first question by an interesting study conducted by Dr. Y. Furusawa with the assistance of Doctors T. Koya and Y. Suzuki at the Metropolitan Bokuto Hospital of patients who presented themselves for induced abortions. Of the 908 patients, 341 or 37.6 per cent had not been using any contraceptive. Although it would be interesting to ascertain from these 341 couples why they did not adopt some contraceptive technique since they refused to bear a child, our present concern is with the 567 couples who had conceived in spite of their attempts at contraception. The methods employed by these 567 couples are shown in table 3.

TABLE 4

Number of contraceptive failures by safe-period pattern

Category .		Safe				Dia-	With-			Per
Pattern		Period	Condom	Jelly	Tablet	phragm	Sponge	drawal	Total	Cent
Total		87	134	23	21	21	11	22	319	100.0
I	A	17	19	8	3	6	3	10	66	20.7
	B			1					1	
II	C	12	7	1		1			21	60 18.8
	D	14	15	2	2	1	1	3	38	
	E	9	6	2		1		2	20	
III	F	25	57	5	8	8	5	3	111	156 49.8
	G	7	9	2	4	1		2	25	
IV	Difficult to Classify	3	21	2	4	3	2	2	37	11.6

I A Method based on original Ogino theory: The period to be avoided is from the 19th to 12th day before the predicted onset of menses. It is important to increase the avoidance period where irregularity exists. (In most of Dr. Furusawa's cases the "Safe period Scale" was used.)

Period treated as safe:

II	B	5 days before and after onset of menses.								
	C	7	"	"	"	"	"	"	"	"
	D	10	"	"	"	"	"	"	"	"
III	E	5	"	"	5 days after last day of menses.					
	F	7	"	"	7	"	"	"	"	"
	G	10	"	"	10	"	"	"	"	"

The above figures have nothing to do with the relative effectiveness of the various methods, which depends upon the number of failures in relation to the total number of users. All we know is that of those 567 couples who had failed, 319 had used the safe period, either alone or in conjunction with some other method.

Dr. Furusawa and his colleagues examined further the pattern followed by the 319 couples to ascertain the safe period and found the relationships indicated in Table 4.

It will be noticed that 21 per cent adhered to the pattern of the original Ogino theory; that 19 per cent adhered to patterns comprised in the second category; and 49 per cent were included in the third category. Table 4, containing the results clearly shows that the less conservative the pattern followed the higher was the failure. We are also more aware now of the difficulties in recommending the safe period method because of the problem of determining each woman's safe period.

We now come to the next vital question. Do people change their minds about controlling births when they experience contraceptive failure? The results from our six districts show a very interesting phenomenon. Our guidance program did not produce any decrease in the number of induced abortions for every 100 pregnancies. In fact this figure was greater during each year of the program than in the year before guidance, as shown in Table 5.

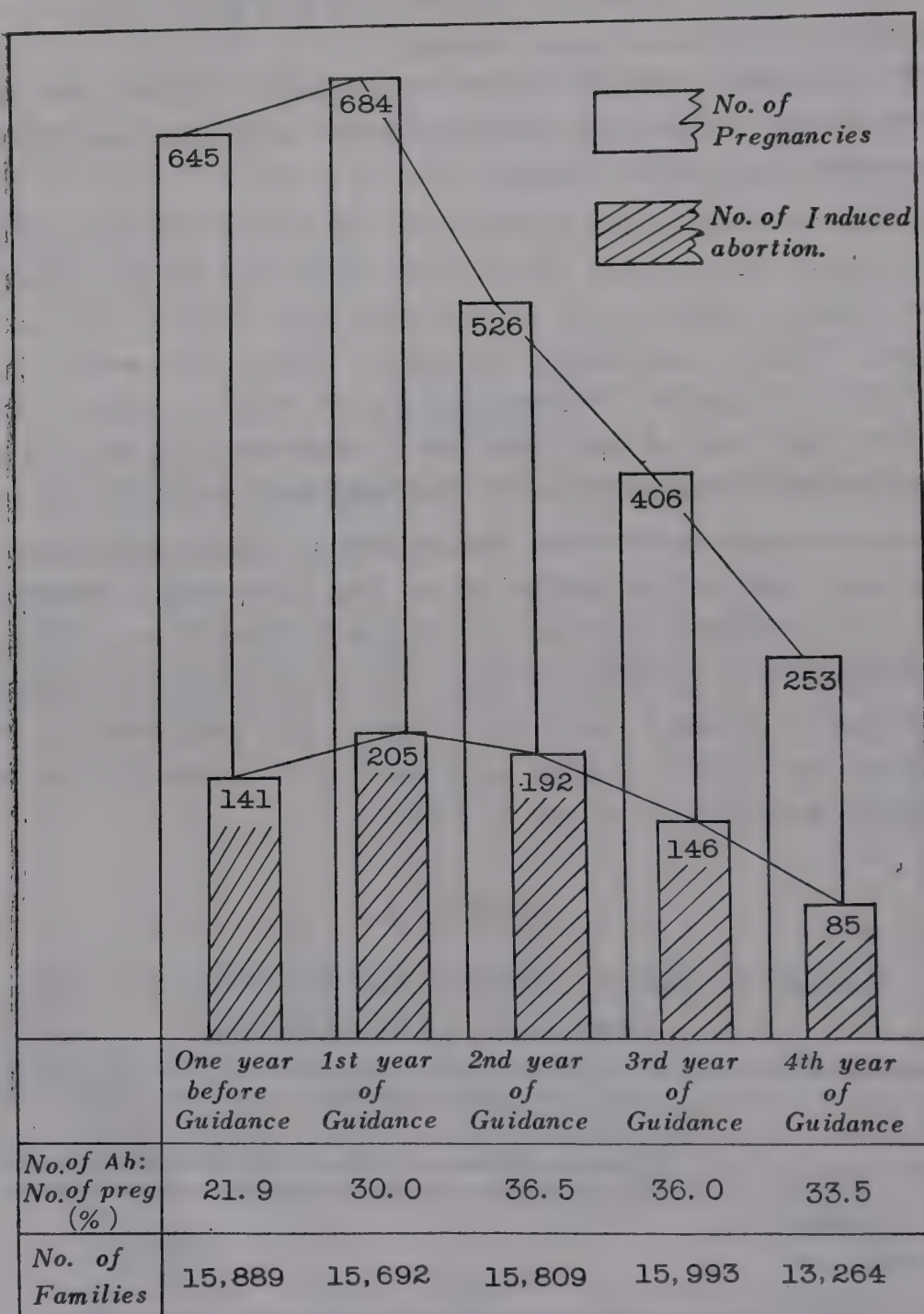
TABLE 5

Number of induced abortions and live births per 100 pregnancies, by guidance year

	One Year Before Guidance	1st Year of Guidance	2nd Year of Guidance	3rd Year of Guidance	4th Year of Guidance	5th Year of Guidance
Number of Induced Abortions per 100 Pregnancies	21.9	30.0	36.5	36.0	33.5	*
Number of Live Births per 100 Pregnancies	69.0	58.6	54.9	57.2	60.0	

*Not computed because of omission during this year of one coal mining area.

Fig. Trends of Pregnancies and Induced Abortions
(under guidance in family planning)



Note: The number of pregnancies and induced abortions are standardized on the basis of the number of wives the first year of guidance.

A word of caution is in order. The number of induced abortions per 100 pregnancies shown in the above table should not be confused with the number of abortions per 100 wives shown in Table 1. The decrease in the latter is a measure of our success in preventing unwanted pregnancies, and is our most significant finding.

Once pregnancy had been achieved, however, whether intentionally or accidentally, its termination either in a live birth or an induced abortion was beyond our control. From the increase in induced abortions per 100 pregnancies shown in Table 5, it would appear that women preferred the consequences of an induced abortion to the alternative of bringing an unwanted child into the world. Can we blame them for that? Absolutely not, because this line of reasoning reflects the results of our educational activity.

A graphic presentation of the trends in pregnancies and abortions during our guidance program is given in Figure 1.

Conclusion

The evidence suggests that if women cannot avoid pregnancy they will resort to induced abortion. The high incidence of induced abortion therefore seems to reflect on the one hand the permeation of the small family concept into all segments of Japanese society and on the other, the lack of experience and skill in the use of other techniques for achieving this goal. A decrease in induced abortion therefore rests on widespread education among the people in the effective use of contraception. Revision or outright prohibition of the present Eugenic Protection Law might not have an appreciable effect on the incidence of induced abortion, since the Japanese people have already shown their determination to limit the size of their families. It remains only for those concerned with the problem to teach them the proper means of achieving this end.

CHAPTER VII

A SURVEY OF HEALTH AND DEMOGRAPHIC ASPECTS OF REPORTED FEMALE STERILIZATIONS IN FOUR HEALTH CENTERS OF SHIZUOKA PREFECTURE, JAPAN

SINCE the passage of the Eugenic Protection Law in 1948 the number of sterilization operations has increased year by year. The number officially reported was 11,403 in 1950, 16,233 in 1951, 22,424 in 1952, and 32,552 in 1953.¹⁾ The actual number of operations performed is difficult to estimate; it may amount to five or ten times the reported number.

The female sterilizations already performed have been sufficient to have a marked effect on birth in future years. The number of operations performed in the years from 1949 to 1953 is sufficient to reduce the number of women in the child-bearing age in the year 1960 by 71,881.²⁾ Assuming that the average age at the time of sterilization

By **Yoshiro Koya** and **Dr. Minoru Muramatsu**, with the Assistance of **Dr. S. Agata**, and **Dr. N. Suzuki**.

Drs. Muramatsu and Agata are with the Department of Public Health Demography, Institute of Public Health, Tokyo. Dr. N. Suzuki is with the Public Health Section, Shizuoka Prefectural Health Department, Shizuoka.

This survey was conducted with the aid of a grant from the Rockefeller Foundation for which acknowledgment is made. The authors owe a great deal to Dr. O. R. McCoy of the Rockefeller Foundation for his valuable advice and help, and to Dr. Irene B. Taeuber of the Office of Population Research, Princeton University, for critical review of the manuscript. Also, the generous cooperation of the health center officials in the four areas surveyed—Shizuoka, Hamamatsu, Numazu and Yoshiwara cities—and of the Eugenic Protection Designated Physicians in those areas is deeply appreciated.

From *The Milbank Memorial Fund Quarterly*, October 1955, Vol. XXXIII, No. 4, pp 368-392.

A Japanese version of this article has been published in *Nihon Koshueisei Zashi Japanese Journal of Public Health*, Vol. I, No. 10, pp. 11-20, December, 1954.

1) Practically all of these operations, 98 to 99 per cent of the total, are performed on females.

2) The computations were made on the assumptions that the age distributions of women found in the present study were applicable to all Japan.

was approximately 30 and that the future fertility would have followed the current trends among Japanese women, the loss of future births from the 72 thousand women would be about 140 thousand. If we assume that actual sterilizations are five times the reported number, the loss of fertile women by 1960 would amount to about 360 thousand, the loss of anticipated births 700 thousand. If actual sterilizations are ten times the reported number, the losses would amount to 719 thousand for fertile women and 1.4 million for births. These, it should be noted, are the anticipated consequences only of the sterilizations that have already occurred between 1949 and 1953. Since sterilizations may well continue from 1954 to 1960, total reductions in live births associated with the sterilization of women may assume major proportions by the year 1960.

The Present Study

Sterilizations, as induced abortions, are performed in accordance with the provisions of the Eugenic Protection Law of 1948. According to this law as amended through May, 1954, there are three categories of sterilizations: (1) Compulsory sterilization performed for psychiatric and eugenic reasons (Article 4); (2) sterilization performed on patients with non-hereditary mental diseases or feeble-mindedness (Article 12); (3) sterilization performed by a physician designated under the Law, with the consent of the person in question and the spouse, in cases where the person in question, the spouse or a relative has a hereditary disease, mental disease or feeble-mindedness, or leprosy, or in cases where "pregnancy or delivery might endanger the life of the mother" or "the mother already has several children and the delivery might markedly injure the health of the mother" (Article 3). In practice, there have been few sterilizations performed under the first and second provisions. Compulsory sterilizations numbered only 273 in 1950, 480 in 1951, 560 in 1952, and 832 in 1953. The great majority of the sterilizations, 97 to 98 per cent of the total, have been performed under the third provision. And within this category most operations are performed for reasons relating to the health of the mother. It is widely believed that the real reasons are socio-economic. In Japan today, sterilizations, as abortions, are performed as a means of family limita-

tion. As between the two means, it is apparent that sterilization is the more definitive means.

The increasing importance of the performance of sterilization and the almost complete absence of any information beyond the reports collected by the Government led to the decision to make a field study. In order to secure some comparability in results, it was decided to make this initial study of sterilization in Shizuoka Prefecture where a field study of abortions had already been made.³⁾

The planning for the survey was completed in April, 1953, and the personal interviews were made from June to September, 1953 in four areas in Shizuoka Prefecture—Shizuoka, Hamamatsu, Numazu and Yoshiwara Health Center Districts—with the cooperation of the Shizuoka Prefectural Health Department. The interviews were conducted by Drs. M. Muramatsu and S. Agata of the Department of Public Health Demography, Institute of Public Health.

The women included in the survey were those living in the four Health Center Districts who were reported as having had a sterilization operation performed between April 1, 1952 and March 31, 1953, under Article 3 of the Eugenic Protection Law (voluntary sterilization). Reported sterilization operations in these areas performed on women living outside the areas were excluded because of the difficulty of locating the women concerned. The average time required for each interview was 30 to 40 minutes. In general, the cooperation of the women was excellent. The total number of cases was 428, the final number of satisfactory returns 338, or 79 per cent. Unknown addresses and out-movement made it impossible to locate some women. The major obstacle was the fact that the Law did not specifically require a detailed address in the reporting of the operation. Most of the interviews were made in the homes, though some were made in the Health Center.

The chief reason for the choice of Shizuoka Prefecture was the interest of the Prefectural Health Department in sterilization and conception control and its willingness to cooperate in the study. The four Health Centers were located in cities between 30,000 and 250,000 in

3) The publications of the results of this study of abortions are cited in the bibliography.

population as of 1950. Each Health Center served both the city and the surrounding rural area. Shizuoka Prefecture itself is slightly above the average among all prefectures of Japan with respect to economic conditions.

The following items were included in the questionnaire: (1) General information about socio-economic conditions in the family such as education of the parents, ability to live within income, etc.; (2) number of past pregnancies and their outcome; (3) number of living children and their sex; (4) health conditions before and after the operation; (5) circumstances under which the operation was performed and the cost; (6) practice of contraception prior to the operation.

Characteristics of the Households

The proportion of husbands and wives who had some education beyond the elementary level was slightly higher in the sterilization study than in the abortion study. (Table 1.) Moreover, as compared

TABLE 1
Educational status of couples surveyed

Educational Status	Sterilization				Abortion	
	Husband		Wife		Husband	Wife
	Number	Per Cent	Number	Per Cent	Per Cent	Per Cent
Graduates from University or College	43	12.7	6	1.8	13.1	3.8
Graduates from Middle School	98(a)	29.1	116(c)	34.4	23.6	30.7
Graduates from Elementary School	196	58.2	215	63.8	63.8	65.5
Total	337(b)	100.0	337(d)	100.0	100.0	100.0

a Includes one husband who left middle school halfway.

b There is one other husband who had no schooling.

c Includes two wives who left middle school halfway.

d There is one other wife whose record was not known.

with the abortion group, the economic status of the sterilization group was somewhat higher. It is difficult to measure this factor directly,

for there was an improvement in the economic status of the national population between the dates of the two studies. An indirect measure is used here—the presence of surplus, balance, or deficit in the household financing. For the nation as a whole, this is related to economic status, the upper socio-economic groups tending to reveal surpluses, the lower groups, deficits. As the data of Table 2 show, the households of the sterilization group had far higher proportions of families with surpluses and far fewer with deficits than did those in the abortion study. This finding, together with that concerning educational status, indicates that in this area of Japan reported sterilizations tended to represent households of higher social and economic levels than reported abortions. When the cost of sterilization and the time required for hospitalization are considered, this difference seems quite natural. It should be noted, however, that it cannot be taken to mean that it was women of the upper social and economic groups who preferred sterilization. Women from low income groups might wish sterilization but find the cost prohibitive.

TABLE 2

Status of household financing

Status of Household Financing	Sterilization Study		Abortion Study
	Number	Per Cent	Per Cent
Surplus	74	22.0	8.8
Balance	172	51.0	48.0
Deficit	84	24.9	40.7
On Relief	7	2.1	2.5
Total	1337	100.0	100.0

¹ There is one other household for which no information was available.

As would be anticipated from the location of the Health Centers surveyed and the characteristics of the households, the husbands of the women who were sterilized were engaged primarily in occupations other than agriculture. (Table 3.) The proportion engaged in agriculture or fishing was approximately one-third that for men in Japan as a whole. On the other hand, service occupations and commerce were relatively 1.5 times more numerous than in Japan as a whole. The

proportion of "white-collar" occupations was quite large. No one engaged in forestry or mining was included in the present survey.

TABLE 3

Occupations of husbands at the time of the sterilization operation

Occupation	Number	Per Cent
Public Service, Company Employees, Clerks	79	23.4
Commerce	63	18.6
Factory Workers	61	18.1
Agriculture, Fishing	46	13.6
General Service Occupations	43	12.7
Physicians, Teachers, Lawyers, Priests	22	6.5
Manufacturing Industries	17	5.0
Others	3	0.9
No Occupation	4	1.2

The Demographic Basis for Sterilization

The age distribution of the wives who had been sterilized is given in relation to that of their husbands in Table 4. There were rather

TABLE 4

Ages of husbands and wives at the time of the sterilization of the wife

Husband	20-34	25-29	30-34	35-39	40-44	45-49	50-54	55-59	Not Stated	Total	Per Cent
Wife											
20-24	1	5	1	1						8	2.4
25-29		9	36	23	1		1			70	20.7
30-34			33	76	21	4		2		136	40.2
35-39				25	59	18	3	1	1	107	31.7
40-44				1	6	7	3			17	5.0
Total	1	14	70	126	87	29	7	3	1	338	100.0
Per Cent	0.3	4.1	20.7	37.3	25.7	8.6	2.1	0.9	0.3	100.0	

significant differences in the age composition of the wives who had

had sterilizations and those in the previous study who had had abortions. The following percentages reveal the differences:

Age of Wife	Sterilization Study	Abortion Study
Below 30	23.1	31.6
30-34	40.2	28.1
35-39	31.7	26.7
40 and Above	5.0	13.6

In the group which had been sterilized, both the proportion of women who were under 30 years of age, and the proportion who were in their forties, were lower than in the group which had had an induced abortion. Wives aged 30 to 39 years comprised more than 70 per cent of those who had been sterilized. In the women in their thirties, the difference between these two groups was especially great in those aged 30 to 34.

The proportion of the sterilized women who had been married 5 to 9 or 10 to 14 years at the time of the sterilization operation was very high. The specific numbers of women by duration of marriage were as follows, periods of six months separation or more having been subtracted:

Duration of Marriage	
Years	Number of Women
0-4	16
5-9	144
10-14	119
15-19	42
20 or More	16
Unknown	1

The median duration of marriage was 10.4 years. This may be regarded as a different expression of the fact that women aged 30 to 39 years represented the highest proportion of those who had been sterilized.

The 338 women who were sterilized had had a total of 1,937 past pregnancies, including those existing at the time of the operation. The distribution of the women by the number of the pregnancies was as follows:

Number of Past Pregnancies	Number of Women
1	4
2	9
3	27
4	57
5	65
6	59
7	64
8	24
9	16
10	6
11	2
12	4
13	1

Of the 1,937 past pregnancies, 590, or 30.5 per cent of the total, had been terminated by an induced abortion and 83, or 4.2 per cent of the total, had been terminated by natural abortion. Among the total of 338 women, only 40, or 11.8 per cent, had not become pregnant at least four times before being sterilized.

The average number of living children per women was 3.4, of whom 1.8 were boys and 1.6 girls. Six of the 338 women had no living children, while 75, or 22.2 per cent of the total, had only one or two children. However, more than three-fourths had three or more living children. The distribution of the women by number of living children was as follows:

Number of Living Children	Number of Women
0	6
1	11
2	64
3	119
4	75
5	41
6	15
7	7

The combination by sex among the children living at the time of the sterilization are given in Table 5.

TABLE 5

Numbers of living children, by sex, at time of sterilization

	Male	0	1	2	3	4	5	6	7	Total
<hr/>										
Female										
0		6	6	24	22	4	1	—	1	64
1		5	31	45	15	10	2	—	—	108
2		9	42	31	10	6	1	—	—	99
3		10	22	11	3	3	—	—	—	49
4		3	9	1	1	—	—	—	—	14
5		—	3	1	—	—	—	—	—	4
Total		33	113	113	51	23	4	0	1	338

Unless there is an important health reason it is generally believed that it is when there are two, three or four children that a couple begins to devote serious consideration to the ultimate size of the family. It is also believed that families prefer male children, and that sterilization or abortion is less likely to occur when living children are wholly or predominantly female. It is interesting to see in our data in the two, three, and four child families those families with male children only outnumber those with female children only in each case. This tendency is particularly pronounced in families with two or three children. Thus, it appears that families with no male children are less apt to have a sterilization operation performed. However, a definite conclusion requires more elaborate analysis.

Among 332 women who had at least one living child at the time of the sterilization, the mean age of the youngest child was 3.4 years. Among 1,345 women interviewed in the abortion study referred to previously, who had at least one living child at the time of the induced abortion, the mean age was 2.5 years. The difference between these two figures is statistically significant.

Previous Attempts at Limitation

It is usually assumed that the decision for sterilization requires strong resolution. Unlike the induced abortion, sterilization is a permanent method of preventing pregnancy. Hence, the data on the rela-

tion between sterilization and previous abortion history is very significant. Of the total of 338 women, only 37, or 11 per cent, stated that they had never had an induced abortion. (Table 6.) The remaining 301 women, 89 per cent of the total, had had at least one induced abortion prior to sterilization (including the induced abortion performed at the time of the sterilization). The total number of induced abortions was 590, an average of 1.7 per woman in the total study group. Thus, the vast majority of women had sterilization after having had at least one induced abortion. The majority of these abortions seem to have been performed as a means of family limitation. The women themselves reported only 89 of the total of 590 abortions to have been performed unwillingly for health or social reasons. These facts indicate that sterilization is not sought immediately as a means of family limitation. Decision to have the operation usually was made only after undesirable experiences with induced abortion.

TABLE 6

Number of induced abortions

Number of Induced Abortions	Number of Women	Per Cent	Cumulative Per Cent
No Induced Abortion	37	11.0	100.0
<i>Induced Abortions</i>			
1	134	39.6	89.0
2	93	27.5	49.4
3	46	13.6	21.9
4	15	4.4	8.3
5	9	2.7	3.9
6	3	0.9	1.2
7	0	0.0	0.3
8	0	0.0	0.3
9	1	0.3	0.3
Total	338	100.0	

The fact that 90 per cent of the women had decided to have a sterilization operation performed only after having had an induced abortion at least once, also is evidence of the strength of the desire to

limit family size. Another question of interest is how many of the women had ever practiced contraception before sterilization. Of the total of 338 women, 176, or 52.1 per cent, answered that they had done so at one time or another.

The summarized results of detailed inquiry of these 176 women who had once practiced contraception are as follows:

1. *Number of living children.* Sixty-two women, 35.2 per cent, began to practice contraception when they had three living children, 46 or 26.1 per cent when they had two, and 34 or 19.3 per cent when they had four.

2. *Contraception failures.* Of the 176 women, only 17 (9.7 per cent) had never become pregnant because of failure in contraception; the remaining 159 had experienced failure at least once.

3. *Method.* The most frequent was the condom (alone or with jelly) used by 48 (27.3 per cent). Then follow condom plus safe period—24 (13.6 per cent), safe period alone (abstinence during the fertile period)—21 (11.9 per cent), jelly alone—15 (8.5 per cent), vaginal diaphragm (alone or with jelly)—11 (6.3 per cent), withdrawal—10 (5.7 per cent), and the remaining 47 (26.7 per cent) were other methods used alone or in combination.

4. *Satisfaction with contraception.* The women's answers to the question as to whether or not they were generally satisfied with the methods showed that 150 (85.2 per cent) found them unsatisfactory. The most important reasons were the objection of the husband (54 cases) and the lack of reliability of the methods used (53 cases).

In summary, 89 per cent of the women who were sterilized had had at least one induced abortion, and 52 per cent had practiced contraception at some time prior to the sterilization. Among the contraceptors, the method most frequently employed was condom alone or in combination with other methods (72 cases, or about 40 per cent). In many instances, couples were not satisfied with the methods they used, and there were many failures. These results should be interpreted cautiously, however. The study group may have been selected with reference to failure at contraception. No data were secured on regularity of use. The data merely indicate that these women were acquainted with some method of contraception and had been willing to try it. In many cases they resorted to sterilization only after accumulations of contraception failure.

It is of interest to determine the chronological relation between abortion and contraception among those women who had practiced contraception before the sterilization. In the group of 176 such women,

137, or 77.8 per cent, had never practiced contraception prior to the first induced abortion. Of the total study group of 338 women, only half had ever practiced contraception, but among those who made attempts at family limitation more than three-fourths attempted the practice of contraception before they resorted to abortion. Contraception was generally unsuccessful among these women, so they sought their solutions in sterilization, sometimes after long-continued but unsuccessful practice of contraception and subsequent induced abortions or sometimes after induced abortions with contraception discontinued.

The Choice of Sterilization—The Women's Replies

The women themselves were asked why they decided to have the sterilization operation. If only the reasons which the women themselves gave as the most important are tabulated, the results are as follows:

1. *Health*—134 women, 39.6 per cent

Gynecological or obstetrical—72, of which 41 were toxemias of pregnancy and 31 were diseases of the uterus, disorders associated with pregnancy, delivery or the puerperium. General disease of the mother—54, of which 28 were tuberculosis, 26 other diseases. Eugenic, including mental disease or other hereditary diseases in the mother or the relatives—8.

2. *Economic*—60 women, 17.8 per cent

Difficult household financing—42. Household financing more difficult if another child—8; money needed for education—7. Have only girls and need money for weddings—3.

3. *Lack of desire for more children*—114 women, 33.7 per cent

Detailed reasons given here were mainly economic.

4. *Social*—30 women, 8.9 per cent

Do not want a large family because of business or housekeeping—15. Other people or the former wife's children are living together—6. Old age of husband or wife—5. Others—4.

In 174 of the cases, more than half of the total, the most important motive given by the woman was related to economic considerations. Even among those cases in which other reasons were mentioned, economic conditions often played a role as indirect motives. Hence, it is interesting to count all the women who mentioned some economic considerations among the reasons for sterilization. The result of such

a tabulation indicated that there were 225 such women, two-thirds of the total.

The reasons for sterilization among those six women who had no children at all at the time of the sterilization are also interesting. Three reported that the mother's life would be endangered if she became pregnant, two because of a narrow pelvis and one because of valvular disease of the heart. One reported a hereditary disease in the woman, diagnosis unspecified. Two gave economic reasons, one that she was on public relief, the other that there were already too many dependents.

In the previous paragraphs, the direct reasons leading to sterilization were noted. The next pertinent question is the reason why sterilization was selected in preference to other methods of family limitation such as induced abortion or contraception. There was detailed questioning on this subject. The results are summarized as follows.

Reasons	Number of Women	Per Cent
1. Recommended by doctor	132	39.1
2. Tried abortion and contraception but neither was satisfactory	70	20.7
3. Strong reason for limiting size of family, hence wanted a method not subject to failure	41	12.1
4. Had induced abortion, but did not regard it as a good way of limitation	23	6.8
5. Necessary to have another operation, so sterilization was simple	13	3.8
6. Practiced contraception but it was not satisfactory	11	3.3
7. Mental diseases, self or relatives	5	1.5
8. Others, including various combinations of (1) through (7)	43	12.7
Total	338	100.0

Thus, there were three principal reasons for selecting sterilization: (1) The recommendation of a doctor. (2) Unsatisfactory experience with induced abortion, contraception, or both. (3) The desire for a reliable method of family limitation. It is interesting to note that the recom-

mendation by a doctor was the most important single reason. This apparently means that many women had thought much about family limitation and so were easily moved to the decision for a sterilization operation by the expert advice of the doctor. The fact that many women were sterilized because they were not satisfied with other methods of family limitation supports the view that there had been a cumulation of unsatisfactory experience not alone with contraception but also with induced abortion. Briefly speaking, women wanting sterilization usually had been worried about having the operation and some driving force was needed in order to materialize a long-felt desire. Examples are the women who had experienced some undesirable result from induced abortion or the practice of contraception, or the women who had to have another operation anyway and had a sterilization operation too because the doctor recommended it.

The reports of the women as to the role of medical advice in the decision for sterilization is supported by the statements of the majority of the women that they had first learned something of sterilization through doctors or other professional groups. If considered in conjunction with the fact that many women were informed about sterilization by members of their families or friends, it would appear that information about sterilization spreads mainly by word of mouth rather than through printed matter or meetings. This is in sharp contrast with the general observation that information about contraceptive measures usually is obtained from newspapers and magazines.

Source of Information	Number of Women	Per Cent
Professional groups (mainly doctors)	144	42.6
Friends	61	18.0
Printed matter	30	8.9
Families	23	6.8
Meetings	7	2.1
Professional groups and printed matter	24	7.1
Friends and printed matter	16	4.7
Others (various combinations of those listed above)	33	9.8
Total	338	100.0

Medical and Health Aspects

In the present survey, only 45 women, 13.3 per cent of the total, had sterilization performed as a single operation; 293 women had another operation performed at the same time. Of these other operations, 204, 69.6 per cent, were induced abortions, while in 56 cases, 19.1 per cent of the total, other operations than induced abortion, i.e., operation of retroversion, appendectomy, removal of ovarian cyst. Both induced abortions and other operations were performed simultaneously in 33 cases, 11.3 per cent of the total. Thus, only a small proportion of the women had sterilizations performed alone; the majority had some other operation, mainly induced abortion, which gave an opportunity for sterilization.

The length of hospitalization in relation with the kind of operations performed simultaneously is given in Table 7. The median length of stay in a hospital or private clinic was as follows: (1) All cases—9.9 days. (2) Sterilization performed alone—8.7 days. (3) Sterilization performed with induced abortion or with induced abortion as well as another operation—9.3 days. (4) Sterilization performed with operations other than induced abortion—12.3 days.

TABLE 7

Length of hospitalization in relation to type of operation

Number of Days Hospital- ization	Steri- lization Alone	Sterilization + Induced Abortion, or Steriliza- tion + Induced Abor- tion + Another Operation	Sterilization + Oper- ation Other than Induced Abortion	Total
1- 3	1	2	1	4
4- 6	11	45	3	59
7- 9	19	93	9	121
10-12	9	66	20	95
13-15	2	21	15	38
16-40	3	9	8	20
Total	45	1236	56	1337

1 There is one other case for which no information was available

Kind of Sterilization Operation. Of the 338 operations, 278, or 82.2 per cent, were performed by the abdominal approach, while 60, or 17.8 per cent, were performed by the vaginal approach. In all cases the operation was ligation and/or section of the Fallopian tubes. If these 338 operations are broken down by place of operation, 254 were in a hospital and 84 in a private clinic. In regard to the ratio of the two kinds of sterilization operation, there was no great difference between those performed in a hospital and those in a private clinic.

When the ratio between the abdominal and vaginal approaches of sterilization operation was related to the other kinds of operations performed simultaneously, it was found that the ratio was not greatly different whether or not an induced abortion was performed simultaneously. However, the proportion of abdominal approach was relatively higher in cases where some other operation was performed simultaneously, e.g., operation of retroversion, appendectomy, or removal of ovarian cyst. In the 45 cases where sterilization alone was performed, the abdominal approach was used in 33 cases and the vaginal approach in 12 cases.

Month of Pregnancy, Sterilization with Induced Abortion. As mentioned earlier, there were 237 women, 70.1 per cent of the total, who had an induced abortion performed simultaneously with sterilization. The operation was performed before the third month of pregnancy in 83.1 per cent of the cases, during the fourth month in 10.6 per cent, and from the fifth to the seventh month in 6.3 per cent. The breakdown by type of operation was as follows:

Month of Pregnancy	Abdominal	Vaginal
Before end of third	155	42
During fourth	22	3
Fifth to seventh	15	0
Total	192	45

The sterilization operation combined with induced abortion performed from the fifth to the seventh month of pregnancy represented only 6.3 per cent of the cases, which is markedly lower than the percentage in the induced abortion study.

Results of Sterilization—Physical and Mental

There was rather detailed questioning as to the physical and mental changes which the women recognized after the operation. Interpretation of the answers is difficult, however, for only 45 women out of the total of 338 had a sterilization independently of another operation. Obviously 45 is too small a number to obtain significant information about changes which were due solely to sterilization. Even so, the results observed by these 45 women may be of interest and are summarized below. It should be remembered that from 2 to 18 months elapsed between the operation and the interviews.

Of the 45 women, 23 recognized no changes. Thirteen women reported some disorders or discomforts, although they were not severe. Nine felt that they had become healthier after the operation. The chief complaints in the 13 women who felt some discomforts were headache and such various conditions as bleeding, pain in the waist, abdominal pain, lassitude, or a neurotic condition.

The data in regard to changes in menstruation after the operation were tabulated for the 45 women who had a sterilization operation only. Nineteen said that they recognized no changes, and 26 observed changes of one kind or another. The most frequent change was a lesser amount of bleeding, shorter duration of menstruation, or the establishment of regularity in the cycle. In only one case did new menstrual disorders appear after the operation. In other words, three-fifths of the 45 women recognized some changes in menstruation, but almost all changes were improvements. Only one woman experienced menstrual disorders, and this case was a vaginal operation.

The proportion of women who observed no menstrual changes after the operation in the 338 cases as a whole was about the same as in the 45 cases, or 44 per cent. Among changes which took place after the operation, the majority were for the better. However, about one-sixth of the women who observed changes complained of menstrual disorders or irregularity in the cycle as appearing or growing worse after the operation. Since most of the group interviewed had another operation performed with the sterilization, it is apparent that the other operation might have influenced the observed changes.

Failures in Sterilization

Among the 338 sterilizations surveyed, 5 were cases in which the women were having an operation performed for the second time because a first operation performed from one to four years previously had failed. In addition, there was one apparent failure in a woman who eight months before the interview had had a sterilization operation through an abdominal approach simultaneously with an induced abortion. Since that time, she had experienced symptoms of pregnancy on three occasions and her doctor had performed a curettage. Although confirming evidence of these pregnancies was not obtained, the woman planned to repeat the sterilization operation. Failures in sterilization among the 338 operations are not known except in this one case, but it will be some time before the final result can be observed.

The Cost of Sterilization

A tabulation of the total expenses which the women incurred for their sterilizations gave the following results: (1) When there was no subsidy, such as insurance, the cost averaged about 12,000 yen—U.S. \$33.30. (2) With a subsidy, such as the mutual relief insurance of an establishment or a company, the National Health Insurance, or public assistance by partial subsidy from the prefecture, or subsidy under the Daily Life Security Law, the cost to the patient averaged about 7,000 yen—U.S. \$19.50.

These results can be further broken down in accordance with whether the sterilization was performed alone or with other operations, mainly with induced abortion. (Table 8). Where there was no subsidy, the expense averaged 10,120 yen for sterilization alone and 12,630 yen for sterilization with other operations. With a subsidy, average costs were 7,250 yen and 7,310 yen respectively. The expense of sterilization was far greater than that of induced abortion, which was found earlier to average 2,200 yen.

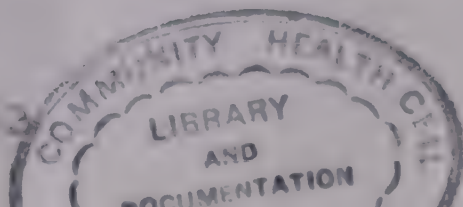


TABLE 8

The cost of sterilization

Total Expense (Yen)	Sterilization Alone	Sterilization with Other Operations	Total
without Subsidy			
1,000- 5,000	—	1	1
5,000-10,000	11	39	50
10,000-15,000	9	53	62
15,000-20,000	1	12	13
20,000-25,000	—	5	5
25,000-30,000	—	2	2
30,000-35,000	—	4	4
Total	21	116	137
with subsidy			
0	2	11	13
1- 2,000	—	2	2
2,000- 4,000	2	14	16
4,000- 6,000	6	51	57
6,000- 8,000	4	34	38
8,000-10,000	6	21	27
10,000-12,000	3	19	22
12,000-14,000	—	10	10
14,000-16,000	—	7	7
16,000-30,000	1	4	5
Total	24	173	197

1 There are four other cases for which information was incomplete. Two were cases with subsidy, but the amount of the expense was not known. One was a case with no subsidy, but the amount of the expense was not known. One was a case for which no information about the subsidy or the amount of the expense was available.

In 199 of a total of 338 cases, or 58.9 per cent, the operation was performed with assistance from an agency which subsidized the cost wholly or in part. Greater availability of such subsidies would alleviate one of the major obstacles now confronting women who desire sterilization.

The Evaluation by the Women

Of the total of 338 women, 171 or 50.6 per cent of the total, stated

that they did not have any difficulties worthy of mention. The following table shows the results of a tabulation with regard to the difficulties mentioned by the remaining 167 women. (When more than one item was mentioned by a woman, all of the difficulties stated were counted.)

The most frequent difficulty was that the women found the required length of stay in a hospital or clinic too long a time to be away from their housekeeping or the care of their children. Next most frequent difficulties were those related to fear of the operation or of possible changes in general physical condition afterward. Also, many found that it was not easy to meet the necessary costs. There were some women who went through with the operation rather unwillingly, but on the other hand, there were some who were so firmly determined that they had it performed against the opposition of their families.

Kind of Difficulties	Number of Times Mentioned	Per Cent of Mentioned Difficulties
1. Too busy to be hospitalized for a certain period of time	75	35.7
2. Fear of operation, or of changes in general physical conditions after operation	38	18.1
3. Too poor to pay for operation	38	18.1
4. Had to wait for some time because of conditions of hospital	15	7.1
5. Decided to have the operation but not quite willing to do so	15	7.1
6. Objection of family, mainly husband	10	4.8
7. Others	19	9.1

Of the 338 women, 325 had the operation performed with the agreement of their husbands. The remaining 13 include 9 women who had the operation even though their husbands opposed it and 4 who had it without their husbands knowing about it.

The major problem involved for the women seems to have been the making of the decision to be sterilized. One question in the present survey was concerned with the length of time been the final decision

to have the operation and the actual performance of it. In over half the cases, the operation was performed less than one week after the decision had been made to have it.

Time Between Final Decision to Have Operation and Performance of It	Number of Women	Per Cent
Less than one week	193	57.1
Less than one month	70	20.7
Less than six months	41	12.1
Less than one year	15	4.5
More than one year	19	5.6
Tota	338	100.0

Almost two-third of the women reported that there had been no changes in their sexual life after the operation. In 106 cases, 31 per cent of the total, the changes were for the better. In only 21 cases they were for the worse. The most important reason for improvement was release from fear of pregnancy. Many women stated that the sterilization increased satisfaction by husbands also. Although there are some previous publications on this subject, most of them concerned patients with mental disease. Since the present survey dealt primarily with normal women, its findings are of great interest.

Although some women experienced certain difficulties before the operation and a few had difficulties after it, 309 women, 91.4 per cent of the total, reported that they were generally satisfied with the operation. It was the impression of the interviewers that the most frequent reason for satisfaction was the surety that no unwanted pregnancy could occur.

Recommendation	Number of Women	Per Cent
Yes, absolutely	287	84.9
Yes, conditionally	10	2.9
No	33	9.8
No answer	8	2.4
Total	338	100.0

Each woman was asked the following question: "Would you recommend the same operation to others, judging from your own experience, if their conditions were such as yours?" The following answers were obtained: (See p. 105).

Thus, the great majority of women replied that they would recommend sterilization to others. Among these answers, however, there were some to which conditions were attached. These conditions were, for example, "in case no other methods of limitation are successful" or "in case it is certain that no more children will be wanted." Among those who did not want to recommend sterilization, the principal reasons were: "It is somewhat lonely to have the feeling that no more children can be born," or "It would be a cause of trouble if another child should be wanted" Fourteen women gave answers such as these. Thirteen would not recommend sterilization because of the uncomfortable experiences at the time of the operation or the physical and mental complaints after it. Six women gave various other reasons.

The women were asked their opinions about male sterilization. Some two-fifths of the women had no knowledge of sterilization for men, but among those who knew about it the pros and cons were about equal. The most frequent reason for opposition was the fear of mental and physical disabilities in men. This was often phrased in such ways as, "If it was done, a man cannot work well," "It makes poor health," or "It does harm to the sexual abilities of men." These answers were given in about two-thirds of those who were against the male sterilization. Among about 14 per cent of the women, the reason for opposition was "After a man was sterilized, you cannot say he will always be well-conducted." There were fewer women in favor of sterilization for men than might have been anticipated.

Summary

A survey of reported sterilizations of women was made in medium-sized and small cities and their adjacent rural areas in four selected Health Center Districts of Shizuoka Prefecture in Japan. Data were collected from a total of 338 sterilized women by two doctors through personal interviews. All of these women had had sterilization performed under the provisions of Article 3 of the Eugenic Protection Law,

and the sterilization had been officially reported to the local health authorities during the period from April 1952 through March 1953. The educational as well as the economic status of the 338 couples surveyed was somewhat higher than that revealed in an induced abortion study conducted previously in approximately the same areas.

At the time of the sterilization operation, almost three-fourths of the women were between 30 and 40 years of age; the median duration of marriage was about 10 years. The average number of past pregnancies, including those which existed at the time of the sterilization operation was 5.7; that of past induced abortions, 1.7. The average number of living children at the time of sterilization was 3.4. Less than two per cent of the women had no living children. Nine-tenths of the women had had at least one induced abortion prior to being sterilized.

Approximately half of the 338 couples had practiced contraception at one time or another prior to the sterilization of the wife. Nearly four-fifths of the couples who had ever practiced contraception had practiced it prior to the first induced abortion. Sterilization was performed eventually because of the unsatisfactory results of contraception and induced abortions.

Among the 338 women interviewed, only 45 had a sterilization operation performed alone; all the rest had some other operation performed at the same time, generally an induced abortion. The average length of stay in a hospital or private clinic was about 10 days. The expense averaged about 12,000 yen (U.S. \$33.30) without subsidy and about 7,000 yen (U.S. \$19.50) with subsidy. Partial or total subsidy was given in three-fifths of the cases.

The most frequent reason given for sterilization was that of difficulties in the household economy; economic reasons were mentioned in more than two-thirds of the cases. Reasons related to health were given as the chief reason for the operation by two-fifths of the women. In only eight cases could the reasons be considered "eugenic."

In answer to the question as to why sterilization was decided upon rather than contraception or induced abortion, most of the women said either "because the doctor recommended it" or "because both of those other methods had proved to be unsatisfactory." Some kind of driving

force appeared to be necessary to make the woman decide on sterilization. Sometimes it was a succession of undesirable experiences with induced abortion; other times advice from a doctor or from a friend or relative was influential enough to tip the scales in favor of the operation. The most important sources of information about sterilization were doctors.

The most frequent obstacles to having the sterilization operation were the long stay in the hospital with its interference with home responsibilities and the difficulties in meeting the cost.

Questions were asked in regard to physical and mental changes experienced after the operation. In so far as sterilizations alone were concerned, almost one-third of the women reported slight complaints—e.g., headache. Generally speaking, however, the course after sterilization was good. Nearly all of the women were satisfied with the operation, while almost nine in each ten said that they would recommend it to others in similar circumstances.

References

1. Koya, Y., et al.: A Survey of Induced Abortion in Japan and Its Significance. *Japanese Medical Journal (Nihon-iji-shimpo)*, No. 1539, October 24, 1953, (English version was published in the *Milbank Memorial Fund Quarterly*, July, 1954, XXXII, No. 3, pp. 282-293.)
2. Koya, Y., et al.: Preliminary Report of a Survey of Health and Demographic Aspects of Induced Abortion in Japan. *Archives of the Population Association of Japan*, No. 2, 1953.
3. Dickinson, L. D. and Gamble, C. J.: *Human Sterilization*. Waverly Press, 1950.
4. Ogawa, G. et. al.: Sterilization Operation (Round-table Discussion). *The World of Obstetrics and Gynecology*, March 1953, Vol. 5, No. 3.
5. Stycos, J. Mayone: Female Sterilization in Puerto Rico. *Eugenics Quarterly*, June 1954, Vol. 1, No. 2.

CHAPTER VIII

STERILIZATION IN JAPAN

✓ THE attitude of the Japanese Government toward sterilization differs from that toward induced abortion. Control is likely to be stricter over the former than the latter, except in cases where sterilization is performed for "eugenic" reasons.

Under the Eugenic Protection Law, passed in 1948 for eugenic reasons and to protect the life and health of the mother, both sterilization and induced abortion are permitted in cases where either the mother or father has a hereditary disease, psychosis or leprosy. Relatives within the fourth degree of consanguinity suffering from the former two also constitute legal grounds for either abortion or sterilization. In addition, both are permitted when pregnancy threatens the life of the mother. These provisions involve rather clear-cut medical grounds about which there is little ambiguity.

Induced abortion is further permitted in the case of "a mother whose health may be affected seriously . . . by delivery from the physical or economic viewpoint."¹ For sterilization, the law does not explicitly prescribe an "economic" basis, but latitude and ambiguity in the exercise of this and possible other motives are latent in Article 3, paragraph 5, which permits sterilization "when the mother already has several children and every pregnancy and delivery can lower her

By Yoshio Koya, M.D. with the Assistance of Dr. Y. Furusawa, Prof. H. Noriki, Dr. H. Yunoki Dr. Y. Suzuki, Dr. T. Koya, Dr. A. Kishi, and Dr. T. Nakano.

From *Eugenics Quarterly*, Vol. 8, No. 3, September 1961, pp. 135-141
Published by American Eugenics Society.

Acknowledgment: I want to express my appreciation to the **Population Council of New York** for making available the services of **Mrs. Dorothy Nortman**, who reviewed the analysis of the data and drafted the manuscript for publication in English.

1) Eugenic Protection Law, Article 14, paragraph 4.

health.” First of all, the term “several” is ambiguous. How many is several—two, three, or more? Also, the word “lower” is a vague expression, involving a subjective judgment of grade of health. It is quite natural, thus, that much misunderstanding and varying standards should have arisen under Article 3, paragraph 5.

The figures on sterilization prepared by the Government from reports of designated doctors² (Table 1) indicate a rapid increase in sterilization cases during the past decade. Table 1 shows that the number of sterilization cases rose from less than 6,000 in 1949 to over 44,000 in 1956, an almost eight-fold increase in seven years. The number of cases has decreased slightly since that time.

The finding that next draws our attention is that relatively few cases are performed for eugenic reasons, usually accounting for less than 5 per cent of the total. Another striking fact is the rapid increase from 5.8 thousand in 1951 to 21.2 thousand in 1952 to 31.2 thousand in

TABLE 1

Number of Cases of Sterilization in Japan, by Reason, 1949-1959

Year	Eugenic Reasons (Including Lepra)	Medical Reasons (Threat to Mother's Life)	Health Reasons (Lowering Mother's Health)	Total
1949	399	2,606	2,690	5,695
1950	611	4,744	6,048	11,403
1951	824	5,848	9,561	16,233
1952	1,183	21,241	—	22,424
1953	1,389	31,163	—	32,552
1954	1,455	13,572	23,029	38,056
1955	1,982	15,640	25,633	43,255
1956	1,823	16,197	26,465	44,485
1957	1,505	16,485	26,410	44,400
1958	1,487	15,821	24,677	41,985
1959	1,283	15,130	23,679	40,092
Total	13,941	158,447	168,192	340,580

2) The Eugenic Protection Law provides an article authorizing the Japan Medical Association Inc. to appoint designated doctors.

1953 in the number of cases relating to paragraph 4, Article 3, that is, cases in which pregnancy threatens mother's life. Since obviously diseases serious enough to threaten life could not possibly increase so rapidly within a year or two, the major part of the added cases should properly be ascribed to paragraph 5 rather than to paragraph 4 of Article 3 of the Law. Apparently in 1952 and 1953 paragraph 5 was not invoked at all by the designated doctors, a situation they corrected in 1954 when adverse effect on health was cited almost twice as often as threat to life.

The conclusion is therefore warranted that the rapid increase in sterilization cases in the past decade was mainly based on health considerations, which in essence is birth control. In other words, the rapid growth of sterilization in recent years is a manifestation of the intense desire of the general public to control family size, as was observed in the case of induced abortion.

TABLE 2

Sex Ratio of Sterilized Cases, 1949-1959

Year	Per Cent	
	Male	Female
1949	1.4	98.6
1950	1.1	98.9
1951	1.5	98.5
1952	1.7	98.3
1953	2.0	98.0
1954	n.a.	n.a.
1955	3.5	96.5
1956	4.0	96.0
1957	4.2	95.8
1958	3.9	96.1
1959	3.0	97.0

What, then, is the difference in motivation for induced abortion and for sterilization? This question will be treated in the forthcoming section after this part is ended with a breakdown of the sterilization cases by sex, shown in Table 2. Although male sterilizations account for less than 5 per cent of the total every year, the proportion increased

from 1.4 per cent in 1949 to 4.2 per cent in 1957. By 1959 this proportion was down to 3.0. It is interesting that these differences coincide with the trend of sterilization cases as a whole, suggesting that sterilization is apt to increase only by a more active participation of men.

The findings presented thus far were based on figures from reports of the designated doctors who sterilized a total of some 350,000 persons between 1949 and 1959. This number does not represent the total for Japan, for many were sterilized on black markets, for a total estimated at three to four times the operations performed by designated doctors. Whatever the true figure, sterilizations are exerting considerable influence upon the reproductivity of the Japanese population and it is quite natural that the Government should attach importance to this practice. Before taking any countermeasures, however, it is essential that the Government ascertain the reasons and circumstances that impel people to undergo sterilization.

In consideration of these needs, our staff initiated a study in January 1958 which thus far has collected information from 812 persons sterilized since the Eugenic Protection Law went into effect. Of these, 180, or 22 per cent, were husbands and 632 were wives. The number of respondents varied with the questions, however, since respondents frequ-

TABLE 3

Number of Sterilized Persons Interviewed,
By Location

Location	No. of Couples	Male	Female
Prefectures:			
Yamagata	112	25	87
Shizuoka	202	27	175
Industrial Enterprises:			
Coal Mine Co.	169	4	165
Steel Co.	120	29	91
Mining Co.	103	92	11
Shipbuilding Co.	106	3	103

TABLE 4

Number of Sterilized Persons, By Reason *

Reason	Number
Medical	110
To control family size	313
Desired number already born	120
Feared added burden of more children	193
Social and domestic reasons	6
Others (reasoning unclear or hard to classify)	48
Total	477

*The cases from one prefecture and two companies were excluded from the computation, since in these cases special motivations encouraged sterilization.

ently could not give unequivocal replies. The interviewers were for the most part medical doctors, plus some adequately trained midwives from our staff. The sources from which cases were drawn are shown in Table 3.

Our first consideration was to investigate the reasons for resorting to sterilization. The results obtained from 477³ respondents are shown in Table 4. The most conspicuous finding from Table 4 is that almost three times as many cases were motivated by the desire to control family size as by medical reasons. This proportion is much higher than the one found in the Government's data based on reports of designated doctors. Moreover, the likelihood must be considered that many cases would be impelled to seek some medical ground for the sterilization since on this basis they would pay a smaller health insurance fee, although their basic motivation would be family limitation.

We next checked the number of living children each couple had at the time of sterilization. As indicated in Table 5 three-fourths of the mothers had three or more living children when sterilized and over a third (35%) had four or more living children. Only 3 per cent had but one child, and only one person was childless. Almost half the

TABLE 5

Number of Sterilized Persons by Number of
Children and Age of Mothers

Age of Mother at Time of Operation	No. of Children									Total
	0	1	2	3	4	5	6	7	8	
20-24		4	9	2	1					16
25-29	1	8	63	89	20	3	1			185
30-34		8	80	160	73	25	5			351
35-39		6	19	67	59	56	13	6		226
40-44			2	6	8	3	0	2	1	22
45-				1	5	2	1	2	1	12
Total	1	26	173	325	166	89	20	10	2	812

3) The cases from one prefecture and two companies were excluded from the computation, as in those cases special motivations encouraged sterilizations.

women (43%) were 30 to 34 years old and had two or more children.

It is worthwhile to compare these figures with those for induced abortion, obtained from 1,382 wives interviewed by us in 1952⁴ (Table 6). Although the latter survey is somewhat outdated, it is still valid as far as number of children at time of abortion is concerned.

TABLE 6
Percent Distribution of Persons Undergoing
Induced Abortion or Sterilization,
By No. of Children

No. of Living Children at Time of Operation	Induced Abortion (n=1382)	Sterilization (n=812)
0	2.7	0.1
1	14.6	3.2
2	17.7	21.3
3	19.5	40.0
4	16.4	20.4
5	12.9	11.0
6	8.5	2.5
7 or more	7.7	1.5
Total	100.0	100.0

TABLE 7

% Distribution By Age of Persons Under-
going Induced Abortion or Sterilization

Age Group	Per Cent of Persons Undergoing	
	Induced Abortion (n=1382)	Sterilization (n=812)
Less than 20	0.5	0.0
20-24	4.5	2.0
25-29	22.1	22.8
30-34	28.1	43.2
35-39	26.7	27.8
40-44	12.8	2.7
45 and over	5.3	1.5
Total	100.0	100.0

TABLE 8

Number of Sterilized Persons Distributed
By Number of Female or Male Children

No. of Female Children	No. of Male Children						
	0	1	2	3	4	5	Total
0	1	16	44	46	9	7	123
1	10	95	120	28	10	3	266
2	34	125	71	28	5	3	266
3	34	47	27	3	1		112
4	11	15	4	3	1		34
5	2	5	3	1			11
Total	92	303	269	109	26	13	812

4) Koya, Yoshio. 1954. A study of induced abortion in Japan and its significance. *Milbank Mem. Fund Quart.*, 32(3): 282-293.

The data in Table 6 suggest that if people are not sterilized before they have more than three or four children, the likelihood is that of the two methods, they will avoid future births by induced abortion rather than by sterilization. It will be noted that while different family size occurs with about the same frequency among the induced abortion group (except at the extremes), the sterilized group is concentrated at the three children level and 82 per cent of them had two to four children. This indicates clearly that some concept of optimum number of children operates more forcefully among couples undergoing sterilization than among those resorting to induced abortion.

A similar relation is observed regarding age (Table 7). A great concentration (43%) of the sterilized are in the 30-34 year age group, compared with 28% of the induced abortion group, who are found with almost equal frequency in the two adjacent age groups. That the 30-34 year age group is the modal group is not surprising since by this age the great majority have borne as many as three children and at the same time still face ten to fifteen years of reproductive capacity.

Another factor influencing sterilization is the sex of the children in a family. This is important in Japan where sons are deemed necessary.

By observing the figures in Table 8 diagonally, we get a frequency distribution of families by the sex composition of their children. For example, 26 of the 812 families have one child, divided in their sex composition as follows:

10	:	16
f		m

The 173 families having two children are classified in their sex composition as follows:

ff		fm		mm
34	:	95	:	44

The 325 families having three children are distributed as follows:

fff		ffm		fmm		mmm
34	:	125	:	120	:	46

Observing these figures, one notes that the distribution favors the male component. In comparing the observed frequency with a theoreti-

cally expected frequency based on the present sex ratio by age of the Japanese population as a whole, we conclude that families with male children resort to sterilization more readily than do those having only female children.

Besides the above, many other factors influence the decision to undergo the operation: physical, psychological, marital, and others. Particularly important is the consciousness that permanent infertility will not disturb the existing good relation between husband and wife.

Another factor that helps a person decide to resort to sterilization is an awareness that physical well-being is never weakened or threatened by such an operation. Incidentally, some of the women in our study feared a masculinization of their bodies and some men feared feminization, a fear that can be overcome when patients realize that this operation has nothing to do with hormone secretion. However, insofar as sexual interest is concerned, we felt a need to conduct a careful investigation, inquiring also whether or not the patients were satisfied with the operation. In view of the complexities of psychological and biological approaches, we proceeded as carefully as possible,

TABLE 9
Sexual and Psychological Effects of Sterilization.

		Effect
Female Sterili- zation	Sexual (442 cases)	No change: 300 (68 %)
		Exciting: 126 (28.5%)
		Depressive: 16 (3.5%)
	Psychological (370 cases)	Satisfactory: 333 (90 %)
		Regrettable: 37 (10 %)
		Effect
Male Sterili- zation	Sexual (97 cases)	No change: 92
		Exciting: 2
		Depressive: 3
	Psychological (101 cases)	Regrettable: 4
		Satisfactory: 97

omitting a fairly large number of cases who gave ambiguous or vague answers.

As observed in Table 9, about two-thirds of the women and almost all of the men indicated no change in sexual feeling. Interestingly, more than one-fourth of the women answered that an excitement took place at sexual intercourse—probably resulting from the realization that, having been sterilized, they would never become pregnant. As for the psychological effects, an impressive finding was that 10 per cent of the wives expressed regret. Our interviewer asked why. Most of them did not answer, but some said that they wanted another child and others replied that their husbands began to hold them in contempt, as if they were no longer women.

We come now to a most important consideration—who takes the initiative for the sterilization operation (Table 10). In nearly 30 per cent of the cases of female sterilization, the wife took the initiative and the husband agreed to the operation. In 22 per cent of the cases, the operation was performed with consent of both husband and wife. Incidentally, among the latter group some said that it was difficult to answer who of the two suggested the idea first. Thus, in a little over half the cases, the initiative was taken by the wife, abetted by the consent or concomitant initiative of the husband. In an additional 15 per

TABLE 10

Source of Initiative for Sterilization Operation

Initiative Taken	Female Sterilization		Male Sterilization	
	No.	%	No.	%
(1) Wife (husband agreed)	163	28.9	8	7.8
(2) Wife and Husband	127	22.5	19	18.6
(3) Husband (wife agreed)	101	17.9	45	44.2
(4) Wife (husband was not necessarily agreeable at first)	85	15.1	6	5.9
(5) Husband (wife was not necessarily agreeable at first)	54	9.6	24	23.5
(6) Recommendation of others	34	6.0		
Totals	564	100.0	102	100.0

cent the wife was the initiator but she had to prevail upon her husband to agree. Husbands took the initiative for the wife's sterilization in 27.5% of the cases, two-thirds of the time with the wife's ready agreement.

With regard to male sterilization, the situation is somewhat different. In 86.3 per cent (2, 3 and 5 in Table 10), the initiative was taken by husbands with their wives readily consenting three-quarters of the time. This implies that husbands are more positive and progressive about this than wives. If the distribution in Table 10 is examined horizontally instead of vertically, it is found that disregarding whether the spouse agrees readily or reluctantly, male sterilization results in 5 per cent of the cases when the wife takes the initiative compared with 31 per cent of the cases when the husband is the initiator. When they propose the operation jointly, 13 per cent of the operations are on males, 87 per cent on females.

Since as noted earlier in this paper, sterilization is a means of practicing family planning, we investigated the relationship between sterilization and other methods of conception control.

None of the 720 people for whom this information was available underwent sterilization without some previous experience in birth control. As noted in Table 11, the fact that 275 out of 720 persons, or 38 per cent, resorted to sterilization without ever having had an induced abortion also is worthy of note. It is presumed that these people.

TABLE 11

Abortion History before Sterilization Operation.

No. of Induced Abortions	Wives	
	No.	%
0	275	38.2
1	265	36.8
2	109	15.1
3	45	6.3
4	16	2.2
5 or more	10	1.4
Total	720	100.0

having practiced conception control successfully, decided to undergo sterilization to avoid the troublesome use of contraceptives. In contrast to these, 445 of 720, or about 60 per cent, had had experience with induced abortion before they decided to undergo sterilization. The average number of abortions per family experiencing abortion is 1.6. It is amazing that about 10 per cent of the sterilized persons had undergone induced abortion three or more times.

These findings show us that sterilization is often resorted to as an alternative to conception control, or as a remedy for induced abortion. This also suggests that if induced abortion is strongly suppressed or prohibited at a place where facilities for conception control are limited, people may be inclined to become sterilized.

Our sample area affords an example of this. At the Kamikita Steel Mining Company in Iwate Prefecture, located in a remote place, the workers live in a very limited area in the mountains. The incentive to control births there is extremely strong because of the poor facilities to bring up and educate children, so that the great majority of the families practice conception control. However, they often fail in the use of contraceptives, because they are poorly informed on the correct technique and contraceptive supplies are inadequate. When wives become pregnant accidentally, they are very anxious to go to town to have abortion induced, a very expensive undertaking. Hence, sterilization is resorted to as a necessity, preferably on the male because husbands can undergo surgery at a smaller cost.

Summary

1. From fewer than 6,000 sterilizations in 1949, the number performed by designated doctors increased to over 44,000 in 1956, with a slight decline since then. By 1959 they had performed some 350,000 sterilizations. Estimates of the total in Japan, including black market operations, amount to three to four times this figure. It is clear that this practice is exerting a considerable influence on the reproductivity of the Japanese population.

2. The reason for this development is not an increase in serious diseases that necessitate the operation, but rather the disposition of

couples to resort to sterilization as a means of checking births.

3. Number of children is a most significant factor in the decision to undergo sterilization. Among the sterilized couples in our survey, the modal group had three children, comprising 40% of our families. The existence of a male child is important in the decision to resort to sterilization. Other motivating factors are economic, physical, marital, psychological, etc.

4. Female sterilizations account for more than 95 per cent of the total. The proportion of male sterilization cases, though small at any time, increases when the whole number of sterilization cases increases, suggesting that sterilization is apt to increase only by a more active participation of men.

5. The husband takes the initiative in cases of male sterilization and the wife in cases of female sterilization. However, in a fairly large number of female sterilizations, the husband took the initiative. Cases of male sterilization undergone by the desire of the wife are very rare.

6. Sterilization is being used as an alternative to conception control or induced abortion. This suggests that if induced abortion were powerfully suppressed in any way (or at a place where conception control was inconvenient), sterilization would become increasingly popular.

CHAPTER IX

LESSONS FROM CONTRACEPTIVE FAILURE

OUR various experiments in family planning guidance produced significant declines in birth and pregnancy rates in remarkably short periods of time. In three rural villages, for example, a birth rate of 26.7 at the beginning of our program in 1950 declined to 13.6 by 1957.¹⁾ Similarly, in a coal mining area, the crude birth rate was reduced from an initial level of 27.6 in 1953 to 13.9 by 1958.²⁾

However, it is not the fact that we achieved dramatic declines in the birth rate that is remarkable or unique, for the decline in the national birth rate from 33.0 in 1949 to 25.3 in 1951, down to 21.5 by 1953, and then to 17.2 in 1957, is without historical precedent. The important and successful element in our family planning programs, as contrasted with the national picture, is that we reduced birth and pregnancy rates by contraceptive practice and a decline in abortions, while in the country as a whole abortions played a major role in family planning practice. In our coal area experiment, for example, abortions declined from 16.2 to 8.4 per thousand population by the last year of the study, when 90 per cent of the 296 families exposed to the risk of pregnancy were practicing some form of conception control.³⁾

By **Yoshio Koya, M.D.** Professor, The Nippon Medical College with the Assistance of **Mrs. D. Nortman, Dr. H. Kubo, Dr. H. Ogino and Mr. M. Kimura.**

From **Population Studies**, Vol. XVI, No. I, July 1962. pp. 4-II.

Acknowledgment: I want to express my appreciation to **Mrs. Dorothy Nortman**, Research Associate of the Population Council, New York, who collaborated with me in the preparation of this report.

-
- 1) Yoshio Koya, "Seven Years of a Family Planning Program in Three Typical Japanese Villages," *Milbank Memorial Fund Quarterly*, Oct. 1958, p. 371.
 - 2) Yoshio Koya, "Five-Year Experiment on Family Planning among Coal Miners in Joban, Japan" *Population Studies*, Nov. 1959, p. 159.
 - 3) *Ibid.* p. 161.

This then is what may be regarded as the success of our guidance programs, that we could effect a simultaneous reduction in births and abortions. Nevertheless we were thwarted in one particular aspect that is the cause of deep concern. In spite of all our efforts, women who became pregnant accidentally could not be dissuaded from resorting to induced abortion. To din into the ears of these housewives that induced abortion has an adverse effect on health or is morally wrong proved as fruitful as preaching to the wind. Our inability to discourage these women from terminating their pregnancies convinced us that no argument against abortion is effective in overcoming their determination to limit their children to the number they can adequately support and educate in accordance with their cultural concepts. On the basis of our experience we have come to recognize that only successful contraceptive practice can eliminate induced abortion for the population with so intense a motivation for small family size as in Japan.

What are the requirements for successful contraceptive practice? The customary approach is to evaluate contraceptives in terms of their clinical performance and to recommend the most effective. In Japan condoms are widely used because of the conviction of their high reliability. Except among higher income groups in urban areas, neither diaphragm and jelly nor jelly with syringe are so popular. These require facilities and privacy not generally available in the average Japanese home, especially in rural areas. Contraceptive foam tablets have been gaining in popularity recently, in rural as well as urban areas, because they are relatively simple to use.

Although clinical reliability and simplicity in use (as well as nominal cost) are important factors for successful contraceptive practice, we have found in our many years of experience that most contraceptive failures result from careless use or occasional omission. In other words, regardless of the particular contraceptive employed and no matter how effective it may be from a clinical point of view, success in practice depends upon proper and constant use.

To exemplify this, although during each year of a four-year period most of the married women in Kajiya village in Kagawa Prefecture were using contraceptive foam tablets, the pregnancy rate declined from year

to year, from 15.3 in 1955 to 13.9 in 1956, 10.0 in 1957 and 9.5 in 1958.¹⁾ Since the foam tablets were no more effective in 1958 than in 1955, how can we explain this decline? Upon investigation we found that with the passage of time our village women, growing more aware of the importance of family planning, tended less and less to omit the use of the contraceptive.

To investigate further the basic causes of contraceptive failure, an extensive survey was conducted in eight prefectures with the cooperation of the health centers. Midwives and nurses attached to the health centers distributed survey cards to 4500 general patients, who filled out the questionnaire at home, either by themselves or with the help of the case workers at their visits. About 95 percent were returned, distributed in the various prefectures as follows:

Fukuoka	936
Tokyo	551
Okayama	506
Kagawa	500
Iwate	412
Ibaragi	500
Saitama	497
Shibuoka	502
Total	4,404

Of the 4,404 returns, 4,287 were properly prepared, representing 95% of the total.

The cards were sorted into two groups: those from women residing in areas where the health center officers had given lectures on family planning, and those in areas where no such lectures had been held. The former we called "instructed areas" and the latter "non-instructed areas." For each of these two groups, we further subdivided the cards into contraceptive users (ever used) and non-users (never used), based on yes-no replies to two direct questions: "Are you practicing any con-

1) Yoshio Koya and Tomohiko Koya, "The Prevention of Unwanted Pregnancies in a Japanese Village by Contraceptive Foam Tablets." *Milbank Memorial Fund Quarterly*, April 1960. p. 169.

traception at present? If not, did you ever practice any contraception?" The distribution of the women according to these classifications is shown in Table I.

TABLE 1
Number and Percent of Women by Contraceptive
Status and Guidance Status

Instruction Status of Area	Contraceptive Status			Percent Distribution	
	Total	User	Non-User	User	Non-User
Given	2114	1831	283	87	13
Not Given	2173	1137	1036	52	48
Total	4287	2968	1319	69	31

It will be noticed in Table I that half the women at the clinics were in instructed areas and half in non-instructed areas. The highlight of the table is that where instruction was available, contraceptive practice was much more prevalent than among women in non-instructed area. Only 13 per cent of the former did not use contraception compared with almost half the women who had not been advised by health center officers. This represents a 67 percent improvement in use level in areas where instruction was offered. Obviously guidance programs draw in marginal people who might otherwise not be contraceptors, which is precisely their aim.

The question of effectiveness of practice is another matter. Users in non-instructed areas are less numerous, but the fact that they are users suggests stronger motivation and successful practice. To what extent the successful use stems from the stronger motivation or from possible sub-fecundity we have no way of establishing. The important point is that in the instructed areas the use effectiveness is diluted by the more widespread practice. The data in Table 2 show higher failure rates among users in instructed than in non-instructed areas.

To establish the validity of the data in Table 2, it must be pointed out that failures represent not total unwanted pregnancies but only accidental pregnancies that occurred during the course of contraceptive use. The failures represent a retrospective history during the course of marriage. (The question read, "How many times did you fail while us-

TABLE 2
Contraceptive Users, Percent of Failures among them,
and Failure per Woman

Instruction Area and Duration of Marriage	Number of Users who		Percent of Users who Failed	Failures		
	Did not Fail	Failed		Number	Per Woman	
					Failing	User
Instruction given	995	836	46	1267	1.5	.69
0-4 years	278	98	26	118	1.2	.31
5-9 "	350	291	45	417	1.4	.65
10-14 "	266	312	54	507	1.6	.88
15 or more "	101	135	57	225	1.7	.95
Instruction not given	689	448	39	662	1.5	.58
0-4 years	132	48	27	60	1.2	.33
5-9 "	252	164	39	235	1.4	.56
10-14 "	220	171	44	262	1.5	.67
15 or more "	85	65	43	105	1.6	.70

ing contraception?") One of the interesting features of Table 2 is the lack of variability in number of failures per woman failing, the progression during the course of marriage being much less than the proportionate increase in duration of marriage. This suggests that a substantial proportion of the failures occurred during the earlier years of marriage, a hypothesis that can be illustrated by regarding the women as a cohort moving through married life. Thus, if we start with 100 contraceptors and assume they experience failures throughout marriage in accordance with the data in Table 2, we can calculate what percent of their total failures throughout marriage occurred within each duration-of-marriage interval.

Table 3 shows that the group in the instructed area experienced its failures rather uniformly during the course of marriage, a third in the first five years, another third during the second five years of marriage, and the remaining third after ten years of marriage. On the other hand, the group without the opportunity to receive instruction from the health centers made half its mistakes in the first five years and then,

TABLE 3
Percent of Total Failures Occurring in each
Duration-of-Marriage Interval

100 Contraceptors after Duration of Marriage	Among 100 contraceptors, number of failures by end of marriage interval ¹⁾	Of total failures, percent occurring in each marriage interval ²⁾
Instructed Area		
0-4 years	31.2	33
5-9 "	64.4	35
10-14 "	87.5	24
15 and over "	95.2	8
Non-Instructed Area		
0-4 years	33.8	49
5-9 "	55.8	31
10-14 "	67.3	17
15 and over "	69.7	3

1) Last column, Table 2, carried to one further decimal place.

2) Percent distribution, first column, this table.

having learned, or having defected from the practice, incurred only one fifth of the failures after ten years of marriage.

This cohort concept also permits calculation of the probability of failure during an interval, as shown in Table 4.

TABLE 4
Probability that a Contraceptor will fail in a given
Duration-of-Marriage Interval

Duration of Marriage (years)	Of a cohort 100 contraceptors, number failing during interval		Probability of failing in interval			
	Instruction Area		Area with Instruction		Area without Instruction	
	Given	Not given	Ratio	Percent	Ratio	Percent
0-4	26	27	26/100	26	27/100	27
5-9	19	12	19/74	26	12/73	16
10-14	9	5	9/55	16	5/61	8
15 and over	3	-1 ¹⁾	3/46	6	-1/56	"0"

1) That this figure is negative is an anomaly due to sampling.

The higher probability of failure in the instructed than the non-instructed area is consistent with the speculations discussed above concerning the probable differential characteristics of the two groups of

users. In the early years of marriage, there is an initial and error period during which both groups are equally likely to fail. It can then be argued that in areas where instruction was not offered by the health centers, users tended to remain users if successful. Hence their failures during contraceptive use would diminish with increasing duration of marriage, possibly because of greater motivation, sub-fecundity, or both. By drawing in marginal people who would otherwise not be users, health center instruction programs fulfil their objective, some practice being better than no practice. At the same time, the more widespread practice achieved by instruction dilutes use effectiveness, yielding the higher failure rates at all duration-of-marriage intervals except the early years. (It should be remembered that failures refer to contraceptive failures, not unwanted pregnancies.)

Failures based on 100 years of contraceptive use support these speculations. Although the two groups show small differences at a particular duration-of-marriage interval, the gap between the instructed and non-instructed users widens as duration of marriage increases. Among users in the non-instructed areas, failures declined by 50 percent, compared with a 24 per cent decline in the instructed areas, as duration of marriage increases from the first 5 to 15 or more years.

TABLE 5
Number of Contraceptive Failures per 100 Years of
Contraceptive Use by Duration of Marriage

Contraceptive Instruction in Area	Duration of Marriage (years)				
	0-4	5-9	10-14	15 or more	Total
Given	20.7	19.5	16.9	15.8	17.6
Not Given	22.1	18.5	14.4	11.2	15.4

We will not attempt to evaluate to what extent the use of a specific method resulted in failure, inasmuch as we do not know the base of total use or when careless use or omission did not result in accidental pregnancy. Table 6 gives the users' reasons for the pregnancies that occurred. Since the women had the opportunity to prepare the survey cards themselves, they were free to determine when and why contraception failed without any psychological pressure from an interviewer.

Only 7 per cent claimed to have failed in spite of proper use. Even so, the 7 per cent is probably an overstatement since the tendency is to claim perfect use rather than admit an omission, carelessness, or other reason such as imperfect fit of diaphragm or tear of condom. With this thought in mind, the fact that about a third of the failures were attributed to miscalculation of the Ogino method becomes even more significant. Occasional omission of mechanical or chemical methods accounted for another fourth of the failures among users in the non-instructed, and almost a third of the failures among user in the instructed areas.

For those in charge of guidance and instruction in family planning there are important implications in the fact that almost two thirds of all failures were attributed either to miscalculation of the Ogino method or omission of another method. One is a reappraisal of the safe period

TABLE 6
Reason for Contraceptive Failure by Duration of Marriage and Instruction Status of Area.

Patient's Reason for Failure	Contraceptive Failure of Couples Married									
	All durations		0-4 years		5-9 years		10-14 years		15 or more years	
	Instruction		Instruction		Instruction		Instruction		Instruction	
	Given	Not Given	Given	Not Given	Given	Not Given	Given	Not Given	Given	Not Given
Total number	1267	662	118	60	417	235	507	262	225	105
	Percent Distribution									
Failed in spite of use	7	7	4	8	8	5	7	8	6	7
Miscalculation of Ogino method	32	37	29	33	34	42	32	35	31	33
Omission of other method	31	27	35	28	28	27	30	26	36	27
Inproper use of other method	17	15	23	15	17	14	18	15	13	19
Other reasons	13	14	8	15	14	11	13	16	14	14
Total	100	100	99	99	101	99	100	100	100	100

method, especially in view of its widespread practice in Japan, where followers of the Ogino method are numerous. The other is the fallacy of making a fetish of the theoretical effectiveness of various contraceptive methods instead of concentrating on sustained use.

This leads to the decisive question of how to impress upon people the importance of faithful adherence to their method and the probable consequence of occasional omission. Motivated as the people are, guidance instructors cannot repeat too frequently the value of family planning for the happiness and welfare of the parents and children. Moreover, the nature of this appeal should vary depending upon the particular circumstances of the group to which it is directed, such as their occupations, income levels, socio-economic status, and also their nationalities.

At our test villages, for example, discussion of family planning was a natural outgrowth of our frequent opportunity to discuss the recent changes in agricultural production. The increase in mechanization and productivity made it clear that in the future, parents would no longer have to regard children as a source of labor supply. We called attention, too, to the newly amended civil law which provides for all children the right to an equal share of the father's property. By concerning ourselves realistically with their problems, we so gained their confidence that in face-to-face interviews we were often regarded as consultants for many of their private affairs, particularly the educational program of their children. Obviously, this afforded the best opportunity to promote the need for faithful and perfect performance in their contraceptive practice.

Having emphasized the underlying need for education, I do want to discuss some aspects of method. Simplicity of the contraceptive method is essential, not only for the poorly educated or ill-housed, but for all couples. If the method is too complicated or troublesome, the temptation to omit its use occasionally is very strong, and we have seen that omission accounts for about a fourth to a third of all our failures.

References to some specific experiences may be pertinent. To some wives in our test villages I recommended syringe and jelly, which I gave free of charge as a trial. To my regret I soon found that the

chemicals were not being used. Upon investigation I learned that the method was not suited to the construction of the farmers' houses, so that the use of the method was extremely troublesome. As one woman said, "How do you expect us to use such a large device in the darkness of our rooms? Don't you know that few of us possess a private room to sleep that would permit us to put on the light without attracting the attention of the rest of the household?"

On another occasion I recommended sponge and salt solution, believing it would have wide popularity because the method is inexpensive and simple to prepare. At first the response was good, but the women did not continue its use. Typical of the reasons for discontinuing was the reply of the woman who said, "Yes, it is cheap, but not convenient. Don't you know that because our husbands fall asleep as soon as they go to bed early in the evening, being so tired from their day's labor, our marital relations often take place at midnight? Do you think it possible for us to get up in the middle of the night, especially in the cold of the winter, go to the kitchen, measure out three spoonsful of salt, and prepare the solution?" Another woman complained, "You told us to wash the sponge carefully after use and dry it in the shade. Do you think this is possible without drawing the attention of curious observers?"

What seems simple in the laboratory is often impossible in the home

Conclusions

1. The success of our guidance programs lies in the fact that we reduced births and abortions simultaneously. While this is very gratifying, we regret the continuing recourse to abortion by women who become pregnant accidentally.

2. On the premise that there is a relation between contraceptive failure and abortion, we undertook a survey of contraceptive failure by distributing survey cards to 4500 general patients attending the health centers in eight prefectures.

3. The return from the patients was 95 percent, about half from areas in which health center officers had lectured on family planning, and half from areas without such instruction.

4. In the instructed areas, 87 percent of the patients were contraceptive users, compared to only 52 percent in the non-instructed areas. This represents a 67 percent improvement in use level in areas where instruction was offered, testifying to the value of health center instruction in making users of marginal people who might otherwise not be contraceptors.

5. Users in non-instructed areas are less numerous, but the fact that they are users suggests stronger motivation and successful practice. The more widespread practice in instructed areas dilutes the use effectiveness, so that except in the early years of marriage failure rates among users are higher in the instructed than non-instructed areas.

6. Although simplicity and clinical reliability of a given method are important factors in successful contraceptive practice, most failures result from miscalculation of the safe period or occasional omission. Failure in spite of correct use seems to be quite rare, despite the tendency to overstate this situation. About 30 percent of the failures were attributed to improper use or other such reasons.

7. The fact that two thirds of all failures were attributed to miscalculation of the Ogino method or omission indicates the need for guidance instructors (a) to reappraise the safe period method and (b) to concentrate on teaching the importance of proper and constant use of whatever method is adopted.

8. Method and motivation are the two basic elements in a family planning program. The simpler the method the better, but what seems simple in the laboratory is not necessarily so in the home.

9. Family planning programs must take into consideration the specific character of the people involved, their occupations, incomes, education, motivational level, and so on.

DO-4/9/62

CHAPTER X

ECONOMIC IMPACT OF INSTRUCTION IN FAMILY PLANNING

A Proposal to the Japanese National Railways

THE object of the family planning-movement is not only to regulate numbers of children but also to promote thereby the welfare and prosperity of the families induced to cooperate in the drive.

The Japanese National Railways (JNR) is pushing this movement forward, in order to improve the health and well-being of the families of its employees, which in turn will induce the employees to devote themselves whole-heartedly to the performance of their duties. This would mean that the work efficiency of the JNR staff will be raised and safe operation of trains, which is one of the main objectives of a railway carrier as a public utility, ensured.

It was in 1956 that the JNR joined this movement and set about giving its employees instruction in family planning. Since then about 65,000 families have thus been instructed.

The plan is to push forward this drive still further and see that all the families of the employees, numbering about 280,000 couples, receive such instruction.

Below is given an estimate of the results of family-planning instruction likely to be obtained in the JNR in the future according to plan; an outline of the results thus far obtained is also given.

Needless to say, the instruction referred to has its impact on the recipients mentally as well as materially, but the statistical figures attached hereto are intended to indicate only the economic effect of such instruction. In other words, the figures are intended to represent the extent of the economic benefits that have been received, or are to be

By **Yoshio Koya, M.D.**, Consultant to Japanese National Railways, in Family Planning.

From **Eugenics Quarterly**, Vol. 7, No. 4, Dec. 1960.

received, by the JNR management, the Mutual Aid Association of JNR Employees, and individual employees.

PROCEDURE FOR CALCULATION

During the two-year period from 1956 to 1958, 4,294 families were given individual instruction three times or more. Using the results obtained in this experiment calculations were made to find out how far the expenses of the management, association and employees were reduced owing to the decrease of the number of childbirths, cases of induced abortion, etc.

This will be followed by an estimate of the possible results of family-planning instruction to be applied to all families of married male employees of the JNR.

RESULTS

The reduction in the number of childbirths, cases of induced abortion and cases of miscarriage, as revealed in the survey made of 4,294 families that were given necessary instruction and guidance three times or more during the period 1956-1958, is shown in Table 1.

How the figures given in Table 1 are reflected in the reduction of expense is shown in Table 2. It will be noted from Table 2 that the management of the JNR saved in one year 1,384,848 yen in terms of family allowance and the Mutual Aid Association, 2,451,406 yen in terms of delivery expense, nursing allowance, cost of induced abortion and cost involved in miscarriage, while the annual reduction in the pecuniary burden of the employees totaled 6,944,846 yen. In other words, the family-planning guidance as given to the 4,294 families has resulted in an annual saving of more than 10 million yen.

If it is to be assumed that the families of all JNR married employees from 26 to 45 years old are given the sort of guidance and instruction in family planning which has hitherto been given, then the number of childbirths, cases of induced abortion, etc., would be reduced as shown in Table 3 and an annual saving of 602,000,000 yen be effected, as is shown in Table 4.

TABLE 1

CHANGE IN NUMBER OF BIRTHS, ABORTIONS AND MISCARRIAGES BASED ON INSTRUCTION TO 4,294 FAMILIES

Number of families	Number of induced abortions			Number of miscarriages		
	Before instruction	After instruction	Decrease	Before instruction	After instruction	Decrease
4,294	634	398	236	391	237	154
					49	54

TABLE 2
SAVINGS RESULTING FROM INSTRUCTION TO 4,294 FAMILIES

Beneficiaries of the family-planning movement	Before instruction	Family allowance	Delivery expense	Nursing allowance	Childbirth expense	Child-care expense	Cost of induced abortion	Cost involved in miscarriage	Total
Management	Before instruction	3,720,312							3,720,312
	After instruction	2,335,464							2,335,464
	Amount saved	1,384,848							1,384,848
JNR Mutual Aid Association	Before instruction		4,749,294	1,521,600			226,780	53,045	6,550,719
	After instruction		2,981,418	955,200			137,460	25,235	4,099,313
	Amount saved		1,767,876	566,400			89,320	27,810	2,451,406
Employees	Before instruction				1,520,966	16,821,288	226,780	53,045	18,622,079
	After instruction				954,802	10,559,736	137,460	25,235	11,677,233
	Amount saved				566,164	6,261,552	89,320	27,810	6,944,846
Total		3,720,312	4,749,294	1,521,600	1,520,966	16,821,288	453,560	106,090	28,893,110
		2,335,464	2,981,418	955,200	954,802	10,559,736	274,920	50,470	18,112,010
		1,384,848	1,767,876	566,400	566,164	6,261,552	178,640	55,620	10,781,100

(All figures in yen)

TABLE 3
ESTIMATED CHANGE IN NUMBER OF BIRTHS, ABORTIONS AND MISCARRIAGES FOR 240,000 FAMILIES

Number of families	Number of childbirths			Number of induced abortions			Number of miscarriages	
	Before instruction	After instruction	Decrease	Before instruction	After instruction	Decrease	Before instruction	After instruction
240,000	35,424	22,224	13,200	21,840	13,248	8,592	5,736	2,736
								3,000

TABLE 4
ESTIMATED SAVINGS RESULTING FROM INSTRUCTION TO 240,000 FAMILIES

Beneficiaries of the family-planning movement	Before instruction	Family allowance	Delivery expense	Nursing	Childbirth (All figures in yen)	Childcare	Cost of induced abortion		Cost involved in miscarriage	Total
							Before instruction	After instruction		
Management	Before instruction	207,868,032								207,868,032
	After instruction	130,410,432								130,410,432
	Amount saved	77,457,600								77,457,600
JNR Mutual Aid Association	Before instruction		265,361,184	85,017,600			12,667,200		2,954,040	366,000,024
	After instruction		166,479,984	53,337,600			7,683,840		1,409,040	228,910,464
	Amount saved		98,881,200	31,680,000			4,983,360		1,545,000	137,089,560
Employees	Before instruction				84,982,176	939,869,568	12,667,200		2,954,040	1,040,472,984
	After instruction				53,315,376	589,647,168	7,683,840		1,409,040	652,055,424
	Amount saved				31,666,800	350,222,400	4,983,360		1,545,000	388,417,560
Total	Before instruction	207,868,032	265,361,184	85,017,600	84,982,176	939,869,568	25,334,400		5,908,080	1,614,341,040
	After instruction	130,410,432	166,479,984	53,337,600	53,315,376	589,647,168	15,367,680		2,818,080	1,011,376,320
	Amount saved	77,457,600	98,881,200	31,680,000	31,666,800	350,222,400	9,966,720		3,090,000	602,964,720

It may be added that the figures given in the tables represent the results of one year. If and when guidance is to be given continually on a permanent basis, the results to be obtained would be incalculably effective.

Since all this means a definite alleviation of the monetary burden of the JNR employees, it may be safely averred that the family-planning movement should be pushed forward vigorously, as never before, if only for the promotion of the welfare of JNR employees.

(This survey was made on the basis of the data prepared by the Medical Section, Welfare Department, Japanese National Railways.)

The calculation was made on the following basis of expense (in Japanese yen) per childbirth:
Basis for Calculation

1. Management		<i>In Yen</i>
Family allowance	Monthly average per person	489
	Annual average per person	5,868
2. Mutual Aid Association of Employees		
(1) Delivery expense	Average per person	7,491
(2) Nursing allowance	Monthly allowance per person	400
	This allowance is given for six months.	
	400 x 6	2,400
(3) Cost of induced abortion	Cost per case—116 points x 10 x ½	580
(4) Cost involved in miscarriage or stillbirth	Cost per case	
	103 points x 10 x ½	515
3. Employees		
(1) Cost of childbirth—per person	<i>In Yen</i>	
Cost of medical treatment	4,490	
Cost of childbirth	5,400	
Total	9,890	
Less amount paid by Aid Ass'n.	7,491	
		<u>2,399</u>
(2) Child-care expense—annual cost per person		
	<i>In Yen</i>	
Cost of child care	34,800	
Less nursing allowance	2,400	
Less family allowance	5,868	
Total	8,268	
		<u>26,532</u>
(3) Cost of induced abortion—cost per case		
	116 points x 10 x ½	580
(4) Cost involved in miscarriage—cost per case		
	103 points x 10 x ½	515

CHAPTER XI

A FAMILY PLANNING PROGRAM IN A LARGE POPULATION GROUP

The Case of the Japanese National Railways

IN most of our family planning studies we found it both expedient and sufficient to deal with relatively small groups of people. This is one of the reasons why, successful as our programs have been, family planning groups in Asian countries outside Japan have not seen in our techniques and methods a ready means of dealing with the complexities and vastness of their family welfare problems. In Japan, too, we are concerned with the question of how to bring successful contraceptive practice to large groups of people because, although we have set a historical record in the extent and rapidity of the decline in our national birth rate, abortion has played and continues to play too great a role in this phenomenon.

Whereas small family planning programs do not necessarily require a complex, formal administrative set-up, in dealing with large population groups the structure and organization of the guiding team are of paramount importance. Thus, in its attempt to spread family planning practice among large segments of the population, the Japanese Government is utilizing the existing public health administrative organization. The basic family limitation plan is formulated by the Bureau of Public Health of the Welfare Department of the Central Government, from whence it is passed on, together with a monetary appropriation, to the Health Department of each Prefectural Government. To implement the plan the Health Centers, about 500 in number

By **Yoshio Koya, M.D.** Professor, The Nippon Medical College.

From the **Milbank Memorial Fund Quarterly**, Vol. XL, No. 3, July 1962, pp. 319-327.

Acknowledgment: I wish to express my appreciation to **Mrs. Dorothy Nortman**, Research Associate of the Population Council, New York, who reviewed the analysis of the data and drafted the manuscript for publication in English.

scattered all over the country, oversee the work of some 50,000 case workers, most of whom are midwives. Because of budgetary considerations, at present only relief recipients under the Livelihood Protection Law and other persons who eke out a precarious living, receive guidance and family planning instruction by home visits of midwives; other people have to visit health centers and pay the cost of contraceptives.

The contribution of the Japanese National Railways to the family planning set-up of large population groups is therefore of considerable interest. The Japanese National Railways is a public corporation, of a semi-governmental nature. It has some 450,000 employees, comprising approximately 290,000 householders, of whom about 80,000 have received instruction in family planning since I became a consultant to the company in connection with the program. This number is increasing, and the expectation is that in about five years all the 290,000 households will have received guidance.

Some 160 midwives are engaged as full-time case workers. My own role is to advise on all matters concerning family planning and implementation of the program, as well as to evaluate the results of the work, services I have agreed to render without compensation on condition that my advice is faithfully followed. The Japanese National Railways has been most generous in according me cooperation and convenience in special studies and research connected with family planning.

Budgetary Appropriations

The Japanese National Railways appropriations for family planning have been increasing from year to year. For the fiscal year 1961 the budget approximated ¥58,000,000, about 1.5 times the amount earmarked annually for similar work by the Japanese Government. Furthermore, effective with this budget, expenses may be defrayed from the fund of the Japanese National Railways Employees Mutual Aid Association, especially for the purchase of contraceptives.

This may well prove to be an epoch-making step for two important reasons. One is that by meeting family planning costs through their own Mutual Aid Association fund, instead of the former arrangement whereby the Head Office bore the cost, employees of the company are

experiencing a real awakening to the true aim and meaning of family planning. The second is that the justification for defraying expenses from the fund rests on the provision that the Association fund may be used for the maintenance of health. Thus the precedent has been established that family planning is conducive to health. Unfortunately, under existing laws and regulations, the Government has thus far not seen its way clear to granting our request that it provide funds to organizations that use their mutual associations for family planning programs. This has been a factor limiting the development of guidance programs by enterprises in the country.

The Family Planning Committee of the Japanese National Railways

The importance with which the Japanese National Railways views family planning is shown by the structure, organization and composition of the Family Planning Committee. Besides the Head Office in Tokyo, the Japanese National Railways has nine Regional Offices and twenty-four Operating Divisions scattered throughout the entire system. Each of the Regional Offices of the Company has a Family Planning Committee, composed generally of the following personnel:

1. The chief manager of the office, who is the Committee's chairman. This implies that family planning carries weight regarded as important by the Regional Office.
2. Executives of the Japanese National Railways labor union, and sometimes the chief members of the women's society in the area.
3. The head obstetrics and gynecology physician at the Japanese National Railways hospital in the area, whose function is to give technical advice.
4. The chief of the Regional Office's Welfare Section, as well as the chief of the Health Section of each Operating Division. These people are responsible for the administrative work concerned with the family planning program.

The Family Planning Committee is concerned with implementing the family planning program in its area, selecting the case workers, and directing and supervising their work. In the collection and preparation of the vital data and reproductive histories, the Family Planning Com-

mittee is concerned not only with questions on number of pregnancies, still births, live births and abortions, but also with desired number of children and intention to practice conception control.

Case Workers

As a rule case workers are midwives chosen from those who have passed the State examination on family planning instruction, one case worker for every 400 householders in the area to be covered by the program. Case workers are paid a monthly salary of ¥15,000 and are provided with all travelling expenses relating to their work.

Since it was obviously impossible to give guidance simultaneously to all the 290,000 families of the Japanese National Railways employees, the plan adopted was to begin in areas (1) with a comparatively large concentration of such households, and (2) where especially enthusiastic case workers were to be found.

As stated above, case workers are people who have passed the State examination on family planning. Nevertheless, to orient them for work in so large an organization as the Japanese National Railways, it is considered necessary to give them additional training. This is generally done under the auspices of the Japanese National Railways Head Office in Tokyo, where experts and authorities can give lectures. In the course of training, special attention is given to the following items:

1. Orientation as to the concept of family planning. Each case worker is given to understand that the object of family planning is not so much a matter of population control as it is promotion of family happiness and prosperity. She is further given to understand that family planning is less a question of birth control than of conception control; that is, people are to be helped to avoid conception when they do not desire a birth, so that women will not have to resort to induced abortion, and on the other hand, are to be helped to conceive when they do desire a birth but seem to have difficulty in becoming pregnant.

2. A detailed technical knowledge, imparted to the case workers by the experts.

3. Practical information on the so-called safe period method, misjudgment of which is liable to cause unwanted pregnancy.

Household Guidance and Instruction

To prepare an area for the Japanese National Railways family planning program, an inauguration ceremony is held, usually attended by the principal staff members of the Regional Office and noted persons in the area. This produces the desired effect of impressing upon the wives of the railway employees the importance of the program. Immediately after the ceremony, the women in the area (as many as possible), are invited to attend a short course of lectures on family planning, at which films and slides are shown, and pamphlets distributed.

As a second step in the program, the case workers make door-to-door visits to the people who have shown an interest in practicing conception control. During these visits they distribute contraceptive supplies—an average of 8 condoms a month, or 1 diaphragm a year with some jelly, or 1 case of 12 foam tablets a month or 3 cases every two months. These supplies, even condoms, are delivered to housewives. The case workers also note on cards they bring with them, the contraceptive activities assumed and the previous contraceptive experience of the respondent, including induced abortion.

The third step in the program is to give "group guidance" to the contraceptive users. For this purpose the women are divided into groups according to their method, namely the condom group, the foam tablet group, the diaphragm group, and so on. At these group meetings, not only do the physician and case workers give advice and answer questions, but the individuals are encouraged to compare notes among themselves. In all groups there is discussion of the so-called safe period method and the consequences of induced abortion. At times information is given on sterilization as related to the principles of heredity.

This kind of guidance is maintained for a year or more, during the course of which a feeling of friendship and confidence develops between case workers and their charges. This relationship greatly facilitates guidance and enhances efficiency. The pregnancy rate and the number of induced abortions usually begin to decline, although the latter may increase at first in response to the family planning stimulus. As the program progresses, women begin to attain their objective regarding desired number of children without physical and economic sacrifice, and

their husbands acquire peace of mind about their families that enables them to work at their jobs more efficiently.

Some Actual Results

At the end of 1961 we were giving guidance in the manner described above to some 80,000 households. To analyze the results, we selected those who had been receiving guidance for 3 years and among whom the wife was under 50 years of age. We found that during the first year of guidance, three fourths of the wives practiced some form of conception control under our direction. Sterility, sub-fecundity, and a desire to have children, appear to be the major reasons for not using some form of contraception.

It can be seen in Table 1, which gives the age distribution of the two groups, that the proportion accepting conception control was lowest at the younger and older reproductive age groups, and highest at those ages at which women are still fecund but likely to have borne all the children they want.

TABLE 1
Number of Households by Age of Woman and Contraceptive Status
(as of first year of guidance).

Age	Contraceptive		Total	Percent User
	User	Non-user		
19 and under	3	—	3	—
20—24	77	67	144	53
25—29	1,273	673	1,946	65
30—34	2,872	842	3,714	77
35—39	1,792	330	2,122	84
40—44	675	235	910	74
45—49	236	207	443	53
Total	6,928	2,354	9,282	75

Several observations support the hypothesis that couples interested in avoiding births became users, if not immediately then eventually, and that reasons for not using were mainly current pregnancy, a reliance on

subfecundity, or desire for children. These observations are as follows:

1. The high proportion of couples using a method: 75 percent in the first year, 79 percent in the second year, and 82 percent in the third year.

2. The difference in age distribution of the two types of households, noted above.

3. The sustained birth rate from year to year in the households of non-users and the decline in births in the households adopting a method.

4. The appreciable decline in induced abortions, from 10.6 percent in the first year to 4.1 percent in the third year, of the non-user couples, indicating movement into the contraceptive group of couples who wished to avoid births. The much slower rate of decline in induced abortions among contraceptors illustrates the relationship between induced abortion and contraceptive failure.

These data are given in Table 2.

TABLE 2

Households, Births, and Induced Abortions by Use Status and Year of Program.

	First Year		Second Year		Third Year	
	Number	Percent of Households	Number	Percent of Households	Number	Percent of Households
Contraceptive Users						
Households	6,928	100.0	7,307	100.0	7,645	100.0
Births	872	12.6	673	9.2	552	7.2
Induced abortions	612	8.8	582	8.0	486	6.4
Stillbirths	58	0.8	48	0.6	49	0.6
Non-Users of Contraception						
Households	2,354	100.0	1,975	100.0	1,637	100.0
Births	486	20.6	364	18.4	341	20.8
Induced abortions	250	10.6	143	7.2	67	4.1
Stillbirths	36	1.5	32	1.6	11	0.7

The impact of the program on the households as a whole is truly remarkable. As shown in Table 3, the crude birth rate for all the households the year before the program was 40.8. Naturally this figure

is higher than the national average of 18.0 in 1958, because our households consisted of married couples in age brackets where they normally would have children, all the wives being under 50 years of age, 40 percent of them 30 to 35 years old. It is therefore not surprising that in the year before the program a child was born to about one in five households, suggesting the basis for strong motivation to control births. We would therefore expect a decline in the birth rate in the first year of the program, but the magnitude of the decline, from 40.8 to 30.8, is quite astonishing. Thus the initial impact, on people who had reason to be motivated, was a 25 percent decline in the birth rate in one year.

TABLE 3

**Births, Birth Rates, and Abortions of all
Households by Guidance Year**

	Year before program	First year of guidance	Second year of guidance	Third year of guidance
No. of households	9,282	9,282	9,282	9,282
No. of births	1,743	1,358	1,037	893
Birth rate per 1000 population	40.8	30.8	23.0	19.4
No. of induced abortions	592	861	725	553

By the third year of the program the birth rate was down to 19.4, a 37 percent decline in two years. Of course, not all of this decline can be attributed to the program inasmuch as one would expect some decrease in the birth rate over time in a closed population, even in the absence of contraception. However, considering that at the start of the three year program, 85 percent of the women were under 40 years of age, the time interval involved is too small to have an appreciable effect on fecundity. Thus we are led to the conclusion that a conservative estimate of the impact of the program, after removing the possible influence of motivation stemming from a recent birth the year before the program, is a shrinkage in the crude birth rate of about one-third in two years.

One of the side effects of the program was an initial increase in the number of abortions. It has been our experience, in this as in other studies, that the launching of a planned childbirth program often results

in an initial increase in abortion until people acquire the necessary skill and experience for successful contraceptive practice.

Based on our experience, induced abortions will decline markedly as the program progresses.

The data suggest that after three years in the Japanese National Railways family planning program, very few undesired conceptions occur. Such results are bound to add to the efficiency of the Japanese National Railways workers, who can devote themselves to their duties without the added cares of unwanted children.

CHAPTER XII

THE PREVENTION OF UNWANTED PREGNANCIES IN A JAPANESE VILLAGE BY CONTRACEPTIVE FOAM TABLETS

VAGINAL foam tablets which produce carbon dioxide when moistened by semen or vaginal fluid have many qualities desirable in a contraceptive method. They are inexpensive, easy to use, and easy to learn to use. One user can instruct another without the cost involved in an examination by an especially trained person. No advance preparation is necessary, and there is nothing to remove or wash or dry. The small tube in which the tablets are packed (1.5 cm. in diameter and 8 cm. long) is readily concealed from curious observers.

Because of the advantages of the method and its appropriateness for a public health program to control family size, it seemed worthwhile to make a quantitative test to determine the pregnancy rate among users of foam tablets. This report summarizes the findings of a four year period of observation.

The Population Studied

The test was made in Kajiya Mura, a village with a population of about 1,500 near the seacoast, 40 miles south of Tokyo.

We chose this village as we were informed that many people there could not afford to buy contraceptives even though they wanted to practice birth control. It was thought that they would use foam tablets if they were provided free of charge.

By Yoshio Koya, M.D. Professor, The Nippon Medical College and Dr. T. Koya, Bokuto (Metropolitan) Hospital, Tokyo.

From the *Milbank Memorial Fund Quarterly*, Vol. XXXVIII, No. 2, April, 1960, pp. 167-170.

Acknowledgment: Thanks are due to Dr. Clarence J. Gamble for his useful advice and to the National Committee on Maternal Health, New York, for a contribution of part of the cost of the study.

After due arrangements were made we visited this village in December, 1954, assembled as many wives as possible in a hall and gave them talks on the importance of family planning as we formerly did in other places. The number of women attending was fairly large at the beginning. It decreased after the second visit when we announced that we could not provide any contraceptive foam tablets free of charge.

At the end of the first experimental year (1955) there were 39 wives who had used foam tablets for at least one month. This number increased to 64 in the second year. It was 56 in the third year and 57 last year (1958). The total number of wives who had used foam tablets for at least one month during the four year period of study was 82.

Procedure

Chosen for the study was a contraceptive foam tablet, Sampooon, made in Japan, which had previously been found to reduce the pregnancy rate (1). It weighed 0.55 grams and was made from the formula:

	Per Cent
Phenylmercuric Acetate	0.2
Potassium Bitartrate	53.0
Sodium Bicarbonate	20.0
Calcium Carbonate	1.0
Boric Acid	1.0
Starch	20.3
Talcum	3.5
Eggwhite	1.0

To protect the tablets from moisture before use, they were packed in small glass vials, each holding 16. The stopper was of rubber, 5 mm. thick. Instructions for the use of the tablets were simple. The wife was told to keep the stopper in the bottle except during the brief opening necessary for the removal of a tablet. She was told to place the tablet with her finger as far into the vagina as possible, just before intercourse. No subsequent procedure, such as douching, was prescribed.

The tablets were offered as mentioned above without charge to families in which the wife had not reached the menopause. The offer-

ing began January 1, 1955, and each family that used foam tablets was followed until December 31, 1958.

Effects of the Program

We recorded the numbers of pregnancies, births, induced abortions, miscarriages, etc., only for the tablet users, as this study was planned just to learn the effectiveness of the foam tablet, and not to learn the acceptance by the community for any contraceptive. We also recorded similar data for tablet users in previous years because it was desired to compare the results before and after using the foam tablets.

As seen in Table 1, the number of couples using foam tablets for more than one month varied by year. The pregnancy rates of the users declined from 15.3 (per 100 years of exposure with this method) in 1955, to 9.5 in 1958. For the 82 women who used foam tablets for one month at any time during 1955-1958, the pregnancy rate was 11.9 per 100 years

TABLE 1

Pregnancy rates and termination of pregnancies among users of contraceptive foam tablets in a Japanese village.

Data relate to periods of use during 1955-1957 and to five years preceding use (1950-1954)

YEAR	EXPERIENCE DURING USE OF FOAM TABLETS						Pregnancy Rate Per 100 Years of Exposure (Stix-Notestein)
	Number Wives Using Foam Tablets More Than One Month	Number Months Exposed to Pregnancy	Number Pregnancies	Terminations of Pregnancies			
				Births	Induced Abortions	Others	
1955	39	313	4	0	4	0	15.3
1956	64	516	6	1	5	0	13.9
1957	56		4	1	3	0	10.0
1958	57		4	0	3	1	9.5
1955-1958	82	1,809	18	2	15	1	11.9
EXPERIENCE FIVE YEARS PRECEDING USE							
1950-1954	82	2,908	128	101	19	8	52.8

of exposure to the risk of pregnancy. Accordingly, the average number of months of use for a wife was 22.1, with its standard deviation 1.6.

It is interesting to study the reproductive performance of the 82 women before they began using the foam tablets. The table shows that they had 128 pregnancies during five years preceding the study (1950-1954), corresponding to a pregnancy rate of 52.8. This rate suggests that the majority of these couples did not use any contraceptives in the earlier period during which only 19 of 128 pregnancies had been terminated by induced abortion, compared with 15 among 18 during 1955-1958. The pregnancy rate of 11.9, brought about by the use of foam tablets in the succeeding four years is somewhat lower than the rate for condom, 13.1, shown in our studies of six experimental areas in Japan (three villages and three settlements of coal miners) where 46 pregnancies had occurred during 5,143 couple-months of exposure (2).

Summary

Eighty-two couples in a Japanese village used contraceptive foam tablets for at least one month during the observation from 1955 to 1958. The pregnancy rate during periods of use was 11.9 per 100 years of exposure, while the corresponding rate in 1950-1954 when no contraceptive was used, was 52.8. The rate while using foam tablets is somewhat lower than the rate for condom obtained from our previous studies.

Considering these findings we reached a conclusion that the foam tablet (Sampoo) is effective enough to be recommended to the people at large. Its potential value increases when the ease of use is considered.

References

1. Gamble, C. J.: Pregnancy Rates During the Use of Contraception in India and Pakistan. Report of Proceedings of the 5th International Conference on Planned Parenthood, October, 1955. International Planned Parenthood Federation, London, 1956, p. 145.
2. Koya, Y.: Seven Years of a Family Planning Program in Three Typical Japanese Villages. The Milbank Memorial Fund Quarterly, October, 1958, XXXVI, No. 4, pp. 363-372.

CHAPTER XIII

PROBLEMS IN PROCURING CONTRACEPTIVE MATERIALS IN A RURAL AREA IN JAPAN

Introduction

In the past ten years the practice of family planning has become widely diffused among the people in Japan. According to a nationwide survey conducted by the Ministry of Welfare of the Japanese Government in 1954, one out of every three couples who were in the child-bearing ages reported themselves as practicing some method of contraception at the time of the survey. Five years later, in 1959, another survey sponsored by a newspaper agency revealed that the rate had risen to 42.5 per cent. The upward trend of the diffusion of family planning practice is still continuing today, and it is estimated that 40 to 45 per cent of all Japanese couples who are in the childbearing ages are actually using various contraceptive methods at the present moment. In support of this observation, amounts sold of contraceptive jellies and tablets, as well as of clinical thermometers specially designed for conception control purpose, are said to be increasing these days.

With the increasingly widespread use of contraceptive devices and chemicals, there have been expressed some complaints of certain problems involved in procuring necessary materials. Difficulties arising at the time contraceptive materials are procured usually are more serious in rural areas and among women rather than in cities and among men. Typical examples of the complaints include, for instance: "I feel too shy to ask for a contraceptive at the village drug store. It is particularly true because my village is so small that everybody knows each

By Minoru Muramatsu, M.D., Health Officer, Institute of Public Health, Tokyo, Japan.

From A Paper in Research in Family Planning, by Clyde V. Kiser (Editor): Princeton University Press, 1962.

other so well. Gossip spreads very fast", or, "I know no convenient place in my neighborhood where I can get a supply of contraceptive materials. Stores are all in the heart of the town and I live too far away. Our stocks are run out, and we can not get a refill easily."

In order to cope with the situation, certain counter-measures have been suggested. Utilization of mail order systems or travelling patent-medicine salesmen might offer a solution under some circumstances. More fundamentally, however,, some steps taken on a much larger scale are called for. Thus, in some communities where civic leaders have taken great interest in family planning, arrangements have been made so that the necessary materials are procured in bulk by local village offices or women's associations and distributed to the couples concerned either directly or through the midwives in charge of family planning education. In general this type of organizational activity has been well received by the inhabitants and it helps to solve the difficulties as they assure that good contraceptives can be procured at a low cost without embarrassing experiences.

With the purpose of clarifying the actual conditions relating to these problems, a field survey was conducted recently in a rural area near Tokyo. The observation was mainly concentrated on three major foci: (1) Who is responsible for procuring contraceptive materials?, (2) Where are contraceptive materials procured?, and (3) Maximum expenditure a couple can afford to allow for contraceptive materials.

Methods of the Survey and Characteristics of the People Studied

Saitama Prefecture with a population of about two million, situated north of Tokyo, presents one example of the areas where the above-mentioned organizational activities for facilitating easy procurement of contraceptive materials are sought by local people. Some of the efforts along this line are being initiated on a limited basis in a few communities within the prefecture with the hope that contraceptive devices and chemicals might be made available through the good offices of local village or women's associations for the benefit of a certain number of couples who have more or less serious difficulties in procuring necessary contraceptive materials.

In May and June, 1960, a series of conferences were held at various sites in the prefecture in order to discuss the administrative aspects of family planning promotion with special emphasis on the desirability and feasibility of such organizational activities conducted on the prefecture-wide basis. Technical and clerical officials in charge were invited from local health centers and village offices. The author also was invited to attend as a consultant. Taking advantage of the opportunity, he called on the participants for their cooperation in conducting a survey that would furnish basic data bearing upon the issue under consideration. Questionnaires were handed out to them and it was hoped that they would collect information from as many cases as they could.

After making personal interviews with couples who were currently practicing contraception using either mechanical devices or chemicals or both, they returned the questionnaires filled in with necessary information which numbered 472 cases in all. The majority of the records were collected by public health nurses themselves, but a small number of couples were interviewed by village office clerks.

Among the 472 couples thus surveyed, there were some reported to be living in "cities". However, since it was found that the districts included in this survey were all rural in their actual environment, the group as a whole can well be regarded as rural residents though they belonged to "cities" from the standpoint of political division of the districts.

When the entire group was distributed by the age of the husband, those aged 20 to 29 years represented 20 per cent, 30 to 39 years, 56 per cent, and those aged 40 and over accounted for the remaining 24 per cent.

If viewed by the occupation of the husband, the group may be divided into three major categories as shown below:

White collar	265	56.2 per cent
Farmers	136	28.8
Laborers and shopkeepers	71	15.0
	472	100.0

The first category, white collar occupations, includes such individuals as company employees, teachers, or workers in village offices or



health centers. The laborers numbered 43, and almost all of them were unskilled manual laborers.

Statements made by 469 respondents who reported on their incomes gave an average of about 22,000 yen (60 U.S. dollars) per month. Only 19 couples, or 4.0 per cent, said they were earning less than 10,000 yen, and 77 per cent of the respondents had a monthly income between 10,000 and 30,000 yen. Some differences were noted with this respect among the three occupational groups; the white collar people gave an average of 22,000 yen while the corresponding figures for the farmers and the laborers-shopkeepers were 20,000 and 26,000 yen respectively.

Information as to the kind of contraceptive materials they procured revealed that mechanical devices or appliances (condoms in almost all instances) played by far the most important role as shown below:

Devices	368	78.0 per cent
Chemicals	39	8.2
Devices and chemicals	65	13.8
	472	100.0

(The chemicals mentioned were either tablets or jellies, each used in almost the same degree.)

The selection as between devices and chemicals did not vary so much among the different occupational and income groups.

In summary, then, it can be stated that the couples surveyed were, in general, rural people living in a prefecture north of Tokyo, belonging to the lower middle class in their income levels and were practicing some methods of contraception at the time of the survey among which mechanical devices were chosen in preference over chemicals. The whole group can be divided into three occupational categories: white collar occupations, farmers, and laborers-shopkeepers. The white collar people may be regarded as representing a group of couples with relatively high education but not particularly high incomes, while the laborers and shopkeepers are those who have not received high education but for some reasons are earning decent incomes. The group of farmers shows the lowest income level among the three categories, and their educational background is apparently poor as compared with the group of white collar people.

The following are the results obtained from the analyses of these 472 couples, focussing particular attention on the three major points of interest mentioned before.

Who is Responsible for Procuring Contraceptive Materials?

Answering an inquiry relative to the person responsible for procuring necessary contraceptive materials, the vast majority stated that either the husband or the wife took the responsibility. In only 9 couples was it the joint responsibility of both partners. The following distribution was obtained for the group as a whole:

Husband	291	61.7 per cent
Wife	170	36.0
Husband and Wife	9	1.9
Unspecified	2	0.4
	472	100.0

When the entire group was broken down according to the age of husband, it was found that the cases where the husband took the responsibility were comparatively more numerous among the couples with the husband younger than 35 years. In general, however, the differences by age group were slight and insignificant.

TABLE 1

Which partner of a couple takes the responsibility for procuring contraceptive materials, by occupation and income.

Monthly income (Yen)	White Collar			Farmers			Laborers-shopkeepers		
	Husb., No.	Wife, No.	Husb., %	Husb., No.	Wife, No.	Husb., %	Husb., No.	Wife, No.	Husb., %
Less than 10,000	2	1	67	6	7	46	1	2	33
10,000-20,000	77	31	71	29	31	48	6	9	40
20,000-30,000	73	30	71	24	20	55	13	13	50
30,000-40,000	27	10	73	9	4	59	11	10	52
40,000 and over	5	2	71	2	0	100	3	0	100
Total	184	74	71	70	62	53	34	34	50

Note: This tabulation is concerned only with those couples who stated that either the husband or the wife took the responsibility. Those who gave indefinite answers about the income or the responsible person and those who said that both partners were responsible were not included.

By occupational group the proportion of cases with the husband taking the responsibility was markedly higher in the white collar occupation (70.1 per cent) than in the other two occupations, and the difference between the farmers and the laborers-shopkeepers was very small (51.9 and 5.07 per cent respectively). The influence of income on the other hand, was not so conspicuous except for the highest and lowest income levels. In general, the higher the income, the more frequently the husband took the responsibility.

In order to illustrate clearly the influence of occupational and income status upon the question of which partner took the responsibility for procuring contraceptive materials, Table 1 was prepared.

Among the laborers and shopkeepers the total number of cases where the husband took the responsibility was equal to that of cases where the wife assumed the responsibility. In contrast to this, it is noted that the husband took the initiative in seven cases out of ten among the white collar salaried people, despite the fact that the average income was about 20 per cent higher in the former group than in the latter. At each income level, generally the white collar people showed the highest proportion of couples with husband taking the responsibility, with the farmers and the laborers-shpkeepers following them. Of special interest is an observation that the differences between the white collar and the other two groups tended to become more pronounced at lower income levels, thus showing only a small dispersion of figures in the white collar group from the top to the bottom level in the income scale.

✓ These observations suggest that the social and educational background of a couple is more significant than the amount of income as a factor which determines the strength of initiative and the degree of cooperation on the part of the husband in the practice of family planning.

TABLE 2

Kind of contraceptive materials procured, by person responsible for procurement (per cent).

Person Responsible	Devices	Chemicals	Devices and Chemicals	Total
Husband	81.4	6.9	11.7	100.0
Wife	72.3	10.6	17.1	100.0

In order to see the relationships between the kind of materials procured and the person responsible for the procurement, Table 2 was prepared.

When the husband was responsible for procuring necessary materials mechanical devices were chosen in the majority of cases. The same observation generally was true when the wife took the responsibility, although the role played by chemicals was relatively more important in this case. Among the mechanical devices procured, condoms to be used by the husband were predominant even when the wife was responsible for the procurement.

Where are Contraceptive Materials Procured?

For the entire group the majority of the couples interviewed stated that they were procuring necessary contraceptive materials from pharmacists. In about 20 per cent of all the couples, the procurement was made from other sources which included such agents as midwives, women's associations and other organizations, travelling patentmedicine salesmen, or friends, as shown below. Only a few couples depended on the mail order systems of the publishers of women's magazines.

Pharmacists	368	78.0 per cent
Midwives	46	9.8
Women's associations and other organizations	44	9.3
Travelling patent-medicine salesmen, friends, mail order systems	12	2.5
Unknown	2	0.4
	472	100.0

In order to see if there was any difference in the sources of supply of contraceptive materials by whether the husband or the wife took the responsibility for procurement, Table 3 was prepared.

When the husband took the initiative in procuring contraceptive materials, pharmacists played an overwhelmingly important role, supplying for the most part mechanical devices or condoms. When the procurement was made by the wife, supplies were obtained from sources other than pharmacists in nearly half the cases and the proportion of

TABLE 3

Sources of supply of contraceptive materials, by person responsible for procurement.

Sources	Number		Per cent	
	Husband	Wife	Husband	Wife
Pharmacists	271	87	93.5	51.5
Midwives	5	40	1.7	23.7
Women's associations and other organizations	9	35	3.1	20.7
Travelling salesmen, friends,, mail order systems	5	7	1.7	4.1
Total	290	169	100.0	100.0

chemicals among the materials procured was somewhat higher. From these observations, it is apparent that in those communities in which some organizational efforts are made whereby contraceptive materials are purchased by local women's associations or other agencies and distributed directly or through midwives to the couples concerned, it is the wife who is greatly benefited by such arrangements. She then can obtain necessary materials quite easily without depending entirely upon the husband's cooperation.

Age of husband was found to be unrelated to the source of supply of contraceptive materials.

Table 4 presents the data recording the relation of the husband's occupational group, to source of supply of contraceptive materials.

TABLE 4

Sources of supply of contraceptive materials by husband's occupation (per cent).

Occupation	Pharmacists	Midwives	Women's associations and other organizations	Travelling salesmen, friends, mail order system	Total
White collar	84.0	4.9	8.4	2.7	100.0
Farmers	67.6	14.0	16.2	2.2	100.0
Laborers-shopkeepers	77.5	19.7	0.0	2.8	100.0

In the white collar group, more than eight out of ten couples used drug stores while in the group of farmers, about three out of ten depended on the collective procurement systems conducted by local organizations. These organizational activities offer a comparatively great help to the farmers, who stay home most of the time, have low cash incomes and show relatively poor cooperation on the part of the husband.

That those with extremely low incomes are particularly benefited by the local arrangements for easy procurement of contraceptive materials can be seen in an observation made of the whole group as shown below:

Income per month (Yen)	Those obtaining supplies from pharmacists	Those obtaining supplies from organizations or midwives
Less than 10,000	42 per cent	58 per cent
10,000 and over	80	18

For about three years, the Japanese Government has enforced an administrative scheme whereby the people with the lowest incomes can be furnished with necessary contraceptive materials at half the market price or even free of charge. Because of a shortage of the funds it has not succeeded very remarkably on a nation-wide basis. However, in some local communities the scheme has given a favorable stimulus to leaders in family planning. Accordingly, in some areas there has been an expansion of the work to the extent that local organizational activities for the easy procurement of contraceptive materials are contemplated not only for low income groups but also for others with certain difficulties in the procurement of contraceptives, as is the case with Saitama Prefecture in which the present survey was conducted.

From the above-mentioned findings obtained in the survey, we may conclude that furnishing contraceptive materials through organizations or midwives at a reduced cost will help to solve the problems, particularly for those wives whose husbands earn little and yet are not much interested in family planning. However, it is readily admitted that the number of those benefited by it is quite limited at the present time. Further expansion of the activities conducted along this line in the interest of the socio-economically underprivileged is therefore considered to be necessary and desirable.

Incidentally, when an observation was made of the kind of materials procured according to the sources of supply, the predominance of mechanical devices did not show a marked difference from one source to another as shown below, although the proportion of chemicals was somewhat higher when the materials were supplied from organizations or midwives, as they dealt with the wife 5.4 times more frequently than with the husband.

	Per cent of Mechanical devices
Pharmacists	82
Wives	76
Women's associations and other organizations	70

Maximum Expenditure a Couple Can Afford for Contraceptive Materials

When asked "How much is the maximum amount you can afford to pay for contraceptives in a month?", 452 of the 472 couples included in the present survey gave various figures, ranging from zero to 800 yen. Approximately three quarters of them, however, stated that they could afford something between 100 and 200 yen. Those who said that they could pay nothing numbered only 4 of the total 452 respondents.

The mean amount of expenditure allowable for contraceptives per

TABLE 5

Maximum expenditure a couple can afford for
contraceptives, by husband's occupation.

Occupation	Number of Respondents	Range (Yen)	Average Income (Yen)	Average maximum expenditure (Yen)	Per cent of maximum expenditure to income
White collar	259	0-800	22,000	176	0.80
Farmers	123	50-400	20,000	156	0.78
Laborers- shopkeepers	70	0-500	26,000	181	0.70
Total	452	0-800	22,000	171	0.78

month was found to be 171 yen. Also, statements made by the 452 respondents gave an average monthly income of about 22,000 yen (60 U.S. dollars). Thus, the maximum expenditure a couple could afford to allow for contraceptives corresponds on the average to 0.8 per cent of their income. In general it may be said that one per cent of the income is too much to be allocated for contraceptive devices and chemicals among such couples of the socio-economically lower middle class as those studied in this survey.

Table 5 presents the result of an observation in this respect according to the three major occupational groups.

It is noted that the group of laborers-shopkeepers with the highest average income among the three occupational groups showed only a slightly higher figure than the other two groups in the actual amount of maximum expenditure, and that, in terms of the percentage of maximum expenditure to the income, it was this group that indicated the lowest maximum expenditure of all.

Another observation to be made is the one concerned with the difference in the maximum expenditure by the income a couple was earning. The following table is a summary presentation of the information obtained on this point.

TABLE 6

Maximum expenditure a couple can afford to allow for
contraceptives, by income.

Monthly income	Number of Respondents	Maximum Expenditure Allowable (Yen)	
		Range	Average
Less than 10,000	16	0-200	97
10,000-20,000	183	0-500	161
20,000-30,000	168	0-800	175
30,000-40,000	71	50-500	193
40,000 and over	77	100-500	264

The maximum expenditure a couple can afford to allow does not differ in parallel with the difference in the income. Thus, it may be safe to say that in general the amount of income does not exert a direct, strong influence upon the actual practice of contraception. If a couple

is sufficiently motivated, it will somehow manage to allocate a certain amount of expenditure to the procurement of necessary contraceptive materials unless the income is extremely limited. In other words, the important truth we may learn here is that the social and educational background of a couple is more significant than the actual amount of income as a determinant of the strength of initiative toward the practice of contraception.

An analysis was also made with regard to the possible difference in the maximum expenditure allowable for contraceptives according to whether the responsibility for procurement rests with the husband or the wife. In those cases where the husband was responsible, the average figure was 177 yen while it was 163 yen when the wife was responsible, showing only a small difference.

In connection with the problems in procuring contraceptive materials some maintain rather strongly that it is quite difficult for the wife in the farmer's household to purchase them as she usually is not allowed to carry cash money with her. In order to examine this specific question, the maximum expenditure a couple could afford to allow for contraceptives was observed in the group of farmers according to the person responsible for procurement. The result of such observation, however, did not support the above-mentioned impression. It was found that they could afford on the average a maximum of 154 yen when the husband was in charge of the procurement while as much as 158 yen was considered to be expendable when the materials were procured by the wife. An opinion that the wife is always in a hopelessly powerless position in matters pertaining to family planning among farmers may have been too much exaggerated and require some correction.

Summary and Conclusion

A field survey was conducted in a rural area in Japan during May and June, 1960, with the purpose of clarifying the actual nature of the problems involved in the procurement of contraceptive devices and chemicals. In the collection of data, the majority of cases were interviewed by public health nurses, but a small number of couples were seen by village officials. Questionnaires used for the analysis in the present study totalled 472, all of which were concerned with the lower

middle class couples who were currently practicing contraception (mechanical devices and/or chemicals).

More than half of the husbands in the entire group were 30-39 years old. White collar occupations represented 56 per cent, and farmers and laborers-shopkeepers represented 29 and 15 per cent respectively. The whole group had an average income of about 22,000 yen (60 U.S. dollars) per month, but some differences were noted among the three occupational groups: white collar, 22,000 yen, farmers, 20,000 yen and laborers-shopkeepers, 26,000 yen. The white collar occupations may be regarded as representing a group of couples with higher education but not so high incomes, the farmers, a group with lower education and incomes, and the laborers-shopkeepers, a group of couples with relatively low educational background but who for some reasons were earning relatively high incomes. As for the kind of contraceptive materials procured, nearly 80 per cent selected mechanical devices, of which condoms were mentioned in by far the most instances.

In analyzing the data thus collected, three major questions were chosen as foci of investigation: (1) Who is responsible for procuring contraceptive materials?, (2) Where are contraceptive materials procured?, and (3) What is the maximum expenditure a couple can afford to allow for contraceptive materials?

With respect to who is responsible for procuring necessary contraceptive materials, the vast majority replied that the responsibility rested with either the husband or the wife. Cases where the husband took the initiative represented 62 per cent while those where the wife assumed the responsibility formed 36 per cent of the entire group.

The proportion of cases where the husband was responsible for procurement was 70 per cent in the white collar group as compared with about 50 per cent in the groups of farmers and laborers-shopkeepers. Also there were some differences in this point by income. The general tendency was that the higher the income, the more frequently the husband was responsible. The differences by income, however, were in general less conspicuous than those observed by occupation.

The predominance of mechanical devices over chemicals among the materials procured did not differ markedly by whether the responsibility for procurement was assumed by the husband or the wife. Devices

only, most of which were condoms, were procured in seven out of ten instances even when the wife was in charge of obtaining necessary materials.

Concerning the second point of interest, "Where are contraceptive materials procured?", answers given by 470 couples revealed that for almost 80 per cent of them the materials were supplied from pharmacists. In the remaining 20 per cent, midwives and local organizations, such as women's associations, served as important sources.

There was noted a marked difference in this connection between those couples in which the husband took the responsibility for the procurement of contraceptive materials and those in which the wife was responsible. When the husband took such responsibility, the contraceptive materials, usually condoms, were procured from pharmacists in more than nine cases out of ten. When the wife assumed the responsibility the materials were obtained from midwives or local organizations in nearly half the total cases, and the proportion of chemicals was a little higher than when the responsibility was assigned to the husband. Apparently it is the wife who is particularly benefited when organizational activities for the easy procurement of contraceptive materials are put into operation.

From the viewpoint of occupation, farming couples who generally have lower socio-educational background and cash incomes would find the supply of materials through midwives or organizations particularly helpful. Also, it is evident that midwives or organizations render a most significant service to those couples whose incomes are extremely limited. Putting these findings altogether, we may state that further expansion of the organizational activities to facilitate the ready procurement of contraceptive materials at a reduced cost is highly desirable, especially for the benefit of women whose husbands earn little and yet are less interested than their wives in the actual practice of contraception.

Finally certain observations were made with regard to the maximum expenditure a couple could afford to pay for contraceptive materials. Four hundred and fifty-two couples gave definite answers in this connection, which averaged 171 yen per month. It corresponds to less than one per cent of the average income. Three quarters of the respondents

stated they could afford something between 100 and 200 yen.

No substantial difference was observed among the three occupational groups with respect to the actual amount of expenditure allowable. However, the percentage of maximum expenditure to the income was lowest in the group of laborers-shopkeepers despite the fact that they had the highest average income among the three groups. If viewed by various income levels, the differences in the actual amount of expenditure allowable were not large so far as those with incomes between 10,000 and 40,000 yen were concerned. It seems likely that the income of a couple does not exert a direct, strong influence upon the amount of expenditure they are ready to allow for contraceptives.

In addition, practically no difference was shown in this point between the cases where the husband was responsible for the procurement of contraceptive materials and those where the wife was responsible. This observation also held true with the farmers notwithstanding the opinions maintained by some that farmers' wives do not have enough status within the family to allow themselves a certain amount of expense for contraceptive materials. Such opinions therefore may require some correction in view of the evidence obtained from the present study.

In conclusion, the most important point we note from the present study may be as follows. As determinants of the strength of initiative toward the actual practice of contraception, both the socio-educational background of a couple and the income are significant. Between the two factors, however, the former is much more influential than the latter. In line with this, we have an interesting finding with regard to the initiative taken by the husband in procuring contraceptive materials. In the white collar group the majority of couples solved the problem by purchasing condoms from drug stores through the efforts of husbands, although their incomes were not remarkably high. Furthermore, it was noted that the actual amount of expenditure a couple was ready to allow for contraceptive materials did not differ much within the middle income groups in the present survey. This suggests that a couple would manage somehow to allocate a certain amount if they were fully convinced of the need. Thus, we may have relatively small problems when we deal with couples who have received comparatively high education.

The real issues awaiting due consideration are therefore the problems in procuring contraceptive materials among those with lower socio-educational backgrounds. Among them, the wife has to assume the responsibility for procurement more frequently with a limited amount of expenditure allowable especially when the couple is not earning so much. Simple as it may be for the husband to purchase condoms at a drug store, the wife would find it rather difficult in many instances.

Viewing Japan as a whole, the procurement of contraceptive devices by the husband offers the simplest and most extensive solution of the problems. For the benefit of socio-economically less privileged wives, however, it is considered necessary and desirable to expand further the scheme designed for distributing contraceptive materials through such local organizations as village offices or women's associations at a reduced cost with the Government's financial support. The extent of coverage of such effort may not be very large, but nevertheless its significance is not lessened, since those people may never find be able to actually practice contraception without help of this kind.

CHAPTER XIV

REVIEW OF PAST ACHIEVEMENTS AND THEIR IMPLICATIONS FOR FUTURE STUDIES

THE purpose of this chapter is to review the series of studies that my colleagues, assistants, and I conducted on family planning during the past fifteen years, in order that past experience may shed light on the nature and method of future studies.

The studies we have hitherto pursued were of a purely practical, perhaps teleological, nature. Circumstances obliged us to undertake our programs. We have been more concerned with results than with academic, scholarly study. Our purpose was not to analyze but to abet the demographic change that has taken place, and indeed is still taking place, in post-war Japan. We applaud the phenomenal development of the Japanese economy, but for this to have meaning to the individual Japanese family, efforts have to be made to check a rapid rise in population. All of us, therefore, share in the thinking that childbirth, when neither needed nor desired, should be controlled.

How does one teach people that family planning is desirable? How does one teach the necessary techniques? To what extent are these two questions independent and to what extent is motivation a concomitant of suitability and availability of method? As we look back, it seems we were needlessly apprehensive; yet only fifteen years ago the government and people alike were highly convinced that the growth of population was a fundamental and necessary factor in national strength. Farmers, who comprised about half the population, were particularly opposed to the concept of birth control, because despite the Japanese proverb that the poor have many children, traditionally and historically they regarded children as a treasure, which indeed they

By **Yoshio Koya, M.D.**, Professor, The Nippon Medical College, not published before.

were when it was necessary to have as many hands as possible to carry out their husbandry.

This was the social context when we set out to give guidance and instruction to limit family size. To tackle the crux of the situation, we started our experiment in rural areas in 1949. A year later we directed our efforts towards recipients of relief under the Livelihood Protection Law, namely needy families in the Tokyo slums. Doubtful as we were about the prospects of implanting family planning ideas into the minds of people of this social stratum, we felt that no other group had a greater personal need for guidance and that, on the national level, failure among such people could lead to eventual deterioration in the average quality of the nation. By 1953 we extended our endeavors to industrial workers, recognizing the importance of their welfare to the indispensable industrialization of the nation for the wholesome growth of the national economy. For this purpose we chose coal miners because among no other industrial group was the proverbial deprivation due to large families so marked.

Although we had anticipated all sorts of difficulties, fortunately our fears were not realized and our efforts bore fruit earlier than expected. Since details of the experiments are presented in the reports of this monograph, it is sufficient here simply to touch upon the birth rate. In the three rural villages, not only did the birth rate of 26.7 per thousand population in 1950 drop to 13.6 by 1956, but induced abortions declined during the period by 70 percent. This is in marked contrast to what happened in the rest of the country, for which it is estimated that abortions, that undesirable method of avoiding births, accounted for perhaps up to 70 percent of the controlled births.

The results of our guidance in the three districts of the coal mining area were also reassuring. After five years of instruction, the birth rate fell from 36.9 to 9.3 per thousand population. People were amazed at this decline, but the explanation is simply that the mothers had already borne more children than they wanted. What did astonish us was that our experiments with the relief recipients were as satisfactory as those with the married couples in the farming villages and coal mining districts. These people, we discovered, were less a gathering of

persons of low quality than of unfortunate beings who had either lost their property during the war or their employment because of illness, often tuberculosis. Although their frequent change of abode prevented us from keeping a record of birth rates, for three consecutive years we were able to keep track of 277 of the 418 families to whom we gave guidance. Among the 277 families, 33 children were born in the third year compared with 92 the year before we started our program. This result provided great stimulus and encouragement to the so-called specific family planning program launched by the Government a year later

On the whole, we had every reason to be pleased with the response of the population to the idea of family planning. Nevertheless, soon after we inaugurated our experiments, a new development began to take shape in the nation that caused us great concern. This was the growing tendency of married women to control births by means of induced abortion.

With abortions rising in the country from a level of about 100,000 a year in 1949 to over a million a year by 1953, excluding black market operations, we had reason to be seriously concerned with the possible effect of this surgical procedure on the health of the mothers. The researches we made on this matter in 1952 disclosed two important findings. One was the association with abortion of a high incidence of various diseases, ranging from light anemic symptoms to serious bacterial infections. In this connection we found that about 47 percent of all the cases undergoing operations were suffering from some form of these diseases. The second finding was the high probability of repeated pregnancy following induced abortion: 43 percent were pregnant again within six months of the abortion, 73 percent within a year. We are happy to say there were no deaths among the women in our survey, which covered only married women.

In 1960 we again made a survey to determine frequency of abortion, this time among 1830 women. Our findings showed that 57 percent had one abortion, 29 percent two abortions, and 14 percent had undergone three or more abortions. Some of the women had had as many as seven or eight abortions. With a modal age group of 30 to 35 years, there remained an average of ten to fifteen years of reproductive life,

so that the chances were high of more abortions before menopause. Although our studies were made from a medical, not a socio-economic or socio-psychological viewpoint, our information has led to the realization that abortion is neither a convenient nor an inexpensive method of controlling births because the operation usually has to be performed repeatedly.

Abortion continues to be a major problem in Japan. Too little is known about the medical consequences of repeated abortion. Some doctors are of the opinion that ectopic pregnancy, irregularity in menstruation, and miscarriage, are more frequently encountered in women who have experienced repeated induced abortion than in others. The effects on health and vitality, on resistance to disease, on damage to tissues, as well as the psychological effects, have yet to be scientifically determined.

Such studies are difficult to pursue. They require controlled and careful interviews between patients and physicians expert in these matters. Preferably these studies should be pursued by doctors working in official hospitals rather than by private physicians. Longitudinal studies, that is those covering the same patients over a period of time, as well as cross-sectional analyses of women with different backgrounds, are important. For scientific validity, it is also necessary to study control groups, so that we can learn whether repeated abortions produce consequences that do not appear in women without such histories. The prevalence of abortion in Japan being what it is, such studies should receive high priority.

Our concern with the question of abortion impelled us to investigate the causes of contraceptive failure. Were the contraceptives defective, were they being used improperly, or were couples omitting their use? Our study, although conducted on a small scale, showed clearly that the major reason for failure was omission of a contraceptive during a period of the menstrual cycle when one should have been employed. So many failures were attributed to mistaken use of the so-called safe period method and so widespread is the use of this method, that I am fully convinced this is a paramount problem requiring close and extensive study.

We have to know more about the menstrual cycle. We require more fundamental knowledge of the safe period and of the criteria for judging the safe period in individual cases. In a pilot study conducted by my colleagues, involving some 700 women, they found that the modal frequency of the various menstrual cycle types was the 28-day period, the period of menstrual bleeding decreasing as age increased. Observations on the relation between delivery and the menstrual cycle period revealed a prolonged first cycle following delivery, with gradual reversion to the usual type. What became clear in connection with these observations was the high risk involved in calculating safe periods during these irregular cycles. Since about a third of the women in Japan who practice birth control rely on some type of safe period pattern, further studies of this sort, classified by social strata and living conditions, are very necessary. Particularly interesting to me, for example, is the menstrual pattern of farm women engaged in land development work in remote villages, among whom many cases of amenorrhea have been reported in the busy farming season. Cases of an absence or suspension of the menstrual discharge for reasons other than pregnancy may provide important information in connection with birth control.

Reference has already been made to the fact that the number of undesired pregnancies caused by the omission of contraceptives is greater than is generally realized. What is the best way to minimize such omissions? Obviously, guidance instructors cannot din too frequently into the ears of married couples the probable consequences of such omission, stressing the threat to the health and welfare of the family of unwanted pregnancies.

Related to the question of faithful use is the importance of selecting contraceptives that are easy to use, easy to learn to use if they have to be learned at all, easy to purchase, and last but not least, easy to carry about. People are generally becoming aware of the importance of simplicity in a method. Heretofore it has been recognized that only the simplest method is of use to the needy and poorly educated. What I should like to emphasize is that a simple method is equally necessary for the better-bred and better educated, for if contraceptives, however efficacious, are too complicated to use, difficult to adjust to, difficult or expensive to obtain and difficult to dispose of after use, they are liable

to be omitted even by the most well-intentioned contraceptors.

Chief among the contraceptives used in Japan are the condom. The value of the condom as a contraceptive is universally recognized, and in Japan some 60 to 70 percent of all contraceptors use it. However, it has several drawbacks, one of which is the inconvenience of disposing of it after use. We often hear complaints about this from people living in common lodgings or apartment houses in large industrial areas.

Because of these complaints regarding the condom, we became interested in contraceptive foam tablets, on which we started a study in 1955, with a three-fold approach. In the first, a clinical experiment at the Kajiya village, Dr. Tomohiko Koya, under the supervision of Dr. Yoshio Furusawa and myself, tested 82 women with one kind of tablet called "Sampoon." Among these women who used contraceptive foam tablets for at least one month during 1955-58, and whose average exposure to pregnancy during the interval was 22.1 months with a standard deviation of 1.6 months, the pregnancy rate was 11.9 per 100 women per year of exposure to pregnancy. This degree of protection together with the fact that foam tablets are cheap and easy to use and easy to learn to use, made it seem a desirable method for widespread distribution.

The design of the tablet was improved by Dr. Tomohiko Koya. To provide adequate material when coitus was prolonged he increased the weight from 0.55 to 0.75 grams. To increase the rate at which the materials will spread into the semen he added 0.2 percent of sodium dioctyl-sulfo-succinate (for short, D.O.S.S.). To increase the surface and provide more rapid solution a hole 0.45 cm. in diameter was placed in the center of the 1.5 cm. tablet. The hole has an advantage that its surface increases as solution progresses. It is also believed that the hole will tend to prevent sticking of the tablet to the wall of the vagina and make it more probable that it will reach the region of the cervix.

The second approach was to test the effectiveness of the tablets made from the two designs in the Bokuto (Metropolitan) Hospital, Dr. T. Koya tested the cervical mucus of wives after use of a foam tablet during intercourse, at or near the time of ovulation. The

wife was asked to come to the clinic at the time in the menstrual cycle at which it was estimated that ovulation would occur and the cervical mucus was examined. If it was watery, stringy, and tended to crystallize when dried—properties characteristic of ovulation—the wife was given a tablet and asked to insert it just before coitus that night and to return the next morning. At that time the cervical mucus was examined for motile sperms.

The presence of sperms does not mean that pregnancy would occur, but it furnished a useful test for comparison of the immobilizing power of the two forms of tablets. This has been proved in Kajiya village from 1959 to 1961. In the first year two pregnancies occurred among the village wives during 338 months, and in the second year there were no pregnancies during 294 months of exposure to risk. This yields a pregnancy rate of 3.8 per 100 years of exposure, a remarkable improvement over the 11.9 for the former tablet.

The last approach, to determine the acceptability, is still in progress. This requires a different design from the test for effectiveness. While the latter can sample many people from various places, the former should start with a limited number of people in a designated area. These people are not urged to use the sample contraceptive, but are given a free choice of method.

In our test area in Akita, the number of wives willing to use the newly designed tablet was surprisingly large. We attributed this preference for the new tablet to curiosity or as a response to the fascinating information about it brought from Kajiya village. As we anticipated, therefore, the proportion of users began to decline in time, some stopping because of a "hot feeling" of the tablet, others to return to previous methods. To evaluate acceptability, we must wait until the proportion of users stabilizes.

By now it is well known that of all the people in Asia, the Japanese people alone have displayed the will and capacity to limit births to the number parents feel they can adequately support and educate. While we are justly proud of this achievement, abortion and to some extent sterilization have been important means toward this end. With the latter we are far less concerned than with the former, because while both are surgical procedures, sterilization is a one-time affair. In our

sterilization survey we learned that the increase in sterilizations, from under 6,000 in 1949 to over 44,000 by designated doctors in 1956, resulted not from an increase in serious diseases but from an increasing disposition to regard sterilization as a contraceptive device. Motivation and simple, suitable methods are the two sides of the same coin.

Summary and Conclusion

The family planning experiments we have conducted since 1949—in the three farming villages, the three coal mining areas, and the slum districts of the Tokyo metropolis—plus our studies on abortion, sterilization, and contraceptive failure, were of a purely practical, perhaps teleological, nature, dictated by the urgent demands of the time. More leisurely, scholarly, and analytical work remains to be done, both from the medical and socio-economic points of view.

In closing, I should like to remark that an analysis of the causes and trends of the recent demographic phenomena in Japan would be of tremendous value to an understanding of world population problems, for nowhere else in the world has so violent a change in sociological concepts occurred in so brief a span of time as in Japan. Even the study on induced abortion, which I proposed from a medical point of view, has its sociological aspect, for with the cases of induced abortions reported among unmarried women, it may be that abortion is more a sociological than a medical problem.

Motivated as the Japanese people are to practice family planning, the future need is to develop faithful adherence to simple methods of contraception, so that no mother experiences an unwanted pregnancy.

